



South Coast
AQMD

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ANNUAL AIR QUALITY MONITORING NETWORK PLAN

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INTRODUCTION

An annual review of the Air Quality Monitoring Network is required by Federal Regulations as a means to identify and report needs for additions, relocations, or terminations of monitoring sites or instrumentation. This report describes the network of ambient air quality monitors in the jurisdiction of and operated by the South Coast Air Quality Management District (SCAQMD). It includes a review of actions taken during the 2014-2015 fiscal year and plans for action in the year ahead. This plan addresses the requirement for an annual network plan as listed in Title 40, Part 58, Section 10 of the Code of Federal Regulations (40 CFR § 58.10). Regulations require the report be submitted to the U.S. Environmental Protection Agency (EPA) by July 1 of each year after a 30 day public comment period.

The SCAQMD staff, along with the California Air Resources Board (CARB), conducted an extensive review of the air monitoring sites in the South Coast Air Basin (SCAB) in late 1980. During the review, State and Local Air Monitoring Stations (SLAMS) designations, site type, and spatial scales of representativeness were assigned to the criteria pollutants monitored at each site. Since that time, the EPA Region IX and CARB staff visited selected sites to confirm compliance with applicable siting criteria and related requirements. The most recent site visits occurred in 2013 to conduct a comprehensive Technical System Audit (TSA) of the ambient air monitoring network. Each year, SCAQMD staff conducts an annual review of its air monitoring network and submits it to the EPA. The review process focuses on current and future network air monitoring strategies and network changes are made in consultation with the EPA and CARB. When relocation of monitoring sites is required, site reports are updated in the EPA's Air Quality System (AQS) to document compliance with established siting criteria for the new locations.

Public Comments

Pursuant to Federal regulations, a draft plan is made available for public inspection and comment for a period of 30 days prior to submission of the final plan to EPA. Hard copies of the final document are made available on July 1, 2015 at the SCAQMD's Public Information Desk in Diamond Bar, CA. The document is also available on the SCAQMD website as of May 22, 2015 in the drop down menu under the "Library", "Clean Air Plans" and "Air Monitoring Network Plan." (<http://www.aqmd.gov/home/library/clean-air-plans/monitoring-network-plan>). The final document is submitted to the EPA on July 1, 2015. Public comments and responses are also submitted to EPA to fulfill Federal regulatory requirements. No comments were received by the close of the comment period on June 22, 2015.

Network Design

The SCAQMD operates 39 permanent, monitoring stations and 4 single-pollutant source impact Lead (Pb) air monitoring sites in the SCAB and a portion of the Salton Sea Air Basin in Coachella Valley. This area includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The newest permanent sites were added as part of the near road monitoring network at Ontario Etiwanda and Route 60; Long beach Route 710 and Anaheim. A site was made permanent at Saul Martinez Elementary which monitors emissions from the Salton Sea. The newest source impact Pb sites were added in January 2010 as required by EPA regulation. During 2014, the Burbank, Ontario Fire Station, and Riverside Magnolia sites were discontinued due to termination of leases and/or safety concerns. Table 1 provides a list of monitoring locations,

the EPA AQS site codes, and the pollutants measured at each site. Table 2 provides the spatial scale and the site type for each monitor at all sites.

Table 3 describes the monitoring purpose for the monitors at each site. Table 4 describes the site type, spatial scale and monitoring purpose for continuous particulate analyzers at each site. A requirement of the annual network plan, the *monitoring purpose* is the reason why a certain pollutant is being measured at a certain site.

A list and description of monitoring purposes are provided below and portions are adapted from the CARB annual network plan for 2007.

Background Level monitoring is used to determine general background levels of air pollutants as they enter the SCAB.

High Concentration monitoring is conducted at sites to determine the highest concentration of an air pollutant in an area within the monitoring network. A monitoring network may have multiple high concentration sites (i.e., due to varying meteorology year to year).

Pollutant Transport is the movement of pollutant between air basins or areas within an air basin. Transport monitoring is used to assess and mitigate upwind areas when transported pollutant affects neighboring downwind areas. Also, transport monitoring is used to determine the extent of regional pollutant transport among populated areas and to rural areas.

Population Exposure monitoring is conducted to represent the air pollutant concentrations that a populated area is exposed to.

Representative Concentration monitoring is conducted to represent the air quality concentrations for a pollutant expected to be similar throughout a geographical area. These sites do not necessarily indicate the highest concentrations in the area for a particular pollutant.

Source Impact monitoring is used to determine the impact of significant sources or source categories of air quality emissions on ambient air quality. The air pollutant sources may be stationary or mobile.

Trend Analysis monitoring is useful for comparing and analyzing air pollution concentrations over time. Usually, trend analyses can be used to assess the progress in improving air quality for an area over a period of many years.

Site Comparison monitoring is used to assess the effect on measured pollutant levels of moving a monitoring location a short distance (usually less than two miles). Some monitoring stations become no longer usable due to development, change of lease terms, or eviction. In these cases, attempts are made to conduct concurrent monitoring at the old and new site for a period of at least one year in order to compare pollutant concentrations.

Real Time Reporting/Modeling is used to provide data to EPA's AIRNOW system which reports conditions for air pollutants on a real time basis to the general public. Data is also used to provide accurate and timely air quality forecast guidance to residents of the SCAB.

Multiple purposes for measuring a pollutant at a particular site are possible. There is some overlap between site type and monitoring purposes as defined by EPA and given in Tables 2, 3, and 4.

TABLE 1. List of Monitoring Sites

	Location	AQS No.	Pollutants Monitored	Start Date
1	Anaheim	060590007	CO,NO2,O3,PM10,PM2.5	08/01
2	Anaheim Route 5 Near Road ²	060590008	CO, NO2	01/14
3	ATSF (Exide)	060371406	Pb	01/99
4	Azusa	060370002	CO,NO2,O3,PM10,PM2.5	01/57
5	Banning Airport	060650012	NO2,O3,PM10, PM2.5	04/97
6	Big Bear	060718001	PM2.5	02/99
7	Burbank ¹	060371002	CO,NO2,SO2,O3,PM10,PM2.5	10/61
8	Closet World (Quemetco)	060371404	Pb	10/08
9	Compton	060371302	CO,NO2,O3,Pb,PM2.5	01/04
10	Costa Mesa	060591003	CO,NO2,SO2,O3	11/89
11	Crestline	060710005	O3,PM10	10/73
12	Fontana	060712002	CO,NO2,SO2,O3,PM10,PM2.5,SO4	08/81
13	Glendora	060370016	CO,NO2,O3,PM2.5,PM10	08/80
14	Indio	060652002	O3,PM10,PM2.5	01/83
15	La Habra	060595001	CO,NO2,O3	08/60
16	Lake Elsinore	060659001	CO,NO2,O3,PM2.5,PM10	06/87
17	LAX Hastings	060375005	CO,NO2,O3,PM10,Pb,SO4	04/04
18	Long Beach (Hudson)	060374006	CO, NO2,SO2,O3,PM10	01/10
19	Long Beach Route 710 Near Road ²	060374008	NO2, PM2.5	01/15
20	Long Beach (North)	060374002	PM2.5	10/62
21	Long Beach (South)	060374004	PM10,Pb,PM2.5,SO4	06/03
22	Los Angeles (Main St.)	060371103	CO,NO2,SO2,O3,PM10,Pb,PM2.5,SO4	09/79
23	Mira Loma (Van Buren)	060658005	CO,NO2,O3,PM10,PM2.5	11/05
24	Mission Viejo	060592022	CO,O3,PM10,PM2.5	06/99
25	Norco	060650003	PM10	12/80
26	Ontario Fire Station ¹	060710025	PM10,PM2.5	01/99
27	Ontario Etiwanda Near Road ²	060710026	CO, NO2	06/14
28	Ontario Route 60 Near Road ²	060710027	NO2, PM2.5	01/15
29	Palm Springs	060655001	CO,NO2,O3,PM10,PM2.5	04/71

¹ Site terminated in 2014.

² New site in 2014.

TABLE 1. (cont) List of Monitoring Sites

	Location	AQS No.	Pollutants Monitored	Start Date
29	Pasadena	060372005	CO, NO2, O3, PM2.5	04/82
30	Perris	060656001	O3, PM10	05/73
31	Pico Rivera #2	060371602	CO, NO2, O3, Pb, PM2.5, SO4, PM10	09/05
32	Pomona	060371701	CO, NO2, O3	06/65
33	Redlands	060714003	O3, PM10	09/86
34	Rehrig (Exide)	060371405	Pb	11/07
35	Reseda	060371201	CO, NO2, O3, PM2.5	03/65
36	Riverside (Magnolia) ¹	060651003	CO, NO2, Pb, PM10, PM2.5, SO4	10/72
37	Rubidoux	060658001	CO, NO2, SO2, O3, PM10, Pb, PM2.5, SO4	09/72
38	San Bernardino	060719004	CO, NO2, O3, PM10, Pb, PM2.5	05/86
39	Santa Clarita	060376012	CO, NO2, O3, PM10, PM2.5	05/01
40	SA Recycling ²	Unavailable	TSP, Cr6	06/12
41	Saul Martinez Elementary ²	060652005	PM10, H2S	01/11
42	Temecula	060650016	O3, PM2.5	06/10
43	Uddelholm (Trojan Battery)	060371403	Pb	11/92
44	Upland	060711004	CO, NO2, O3, Pb, PM2.5, PM10, SO4	03/73
45	West Los Angeles	060370113	CO, NO2, O3	05/84

¹ Site terminated in 2014.

² New site in 2014.

TABLE 2. FRM/FEM Criteria Pollutant Spatial Scales and Site Type
SPATIAL SCALE

MI – Microscale

MS – Middle Scale

NS – Neighborhood Scale

US – Urban Scale

SITE TYPE

HC – Highest Concentration

PE – Population Exposure

IM – Source Oriented (Impact)

BK – General Background

Location	CO	NO2	SO2	O3	Manual PM10	Manual PM2.5	Pb
Anaheim	NS/PE	US/PE		NS/PE	NS/PE	NS/PE	
Anaheim Route 5 Near Road ²	MI/HC	MI/HC					
ATSF (Exide)							MI/IM
Azusa	NS/PE	US/PE		US/HC	NS/PE	NS/PE	
Banning Airport		NS/PE		NS/PE	NS/PE		
Big Bear						NS/PE	
Burbank ¹	NS/HC	NS/PE	NS/PE	US/HC	NS/PE	NS/PE	
Closet World (Quemetco)							MI/IM
Compton	MS/HC	MS/PE		NS/PE		NS/PE	NS/PE
Costa Mesa	NS/PE	NS/PE	NS/PE	NS/PE			
Crestline				NS/HC	NS/PE		
Fontana	NS/PE	US/PE	NS/PE	US/PE	NS/HC	NS/PE	
Glendora	NS/PE	NS/PE		NS/HC			
Indio				NS/PE	NS/HC	NS/PE	
La Habra	NS/PE	US/PE		NS/PE			
Lake Elsinore	NS/PE	NS/PE		NS/PE			
LAX Hastings	MS/PE/BK	MS/PE/BK	NS/PE/BK	NS/PE/BK	NS/PE/BK		NS/PE/BK
Long Beach (Hudson)	NS/HC	NS/PE	NS/HC	NS/PE	NS/PE		
Long Beach (North)						NS/HC	
Long Beach Route 710 Near Road ²		MI/HC				MI/HC	
Los Angeles (Main St.)	NS/PE	NS/HC	NS/PE	NS/PE	NS/PE	NS/HC	NS/PE
Mira Loma (Van Buren)	NS/PE	NS/PE		NS/PE	NS/HC	NS/HC	
Mission Viejo	NS/PE			NS/PE	NS/PE	NS/PE	
Norco					NS/PE		
Ontario Fire Station ¹					NS/HC	NS/PE	
Ontario Etiwanda Near Road ²	MI/HC	MI/HC					
Ontario Route 60 Near Road ²		MI/HC				MI/HC	
Palm Springs	NS/PE	NS/PE		NS/PE	NS/PE	NS/PE	
Pasadena	MS/PE	MS/HC		NS/PE		NS/PE	
Perris				NS/PE	NS/PE		
Pico Rivera #2	NS/PE	NS/HC		NS/HC		NS/PE	NS/PE
Pomona	MI/PE	MS/PE		NS/HC			
Redlands				NS/PE	NS/PE		
Rehrig (Exide)							MI/IM
Reseda	NS/PE	US/PE		US/HC		NS/PE	
Riverside ¹	MI/HC	US/PE				NS/HC	MI/HC
Rubidoux	NS/PE	US/PE	NS/PE	US/HC	NS/HC	NS/HC	NS/PE
San Bernardino	MS/PE	US/PE		NS/HC	NS/HC	NS/PE	NS/PE
Santa Clarita	NS/PE	NS/PE		US/HC	NS/PE		
South Long Beach					NS/HC	NS/HC	NS/HC
SA RECYCLING							HC/IM
Temecula				NS/HC			
Uddelholm (Trojan Battery)							MI/IM
Upland	NS/PE	NS/PE		NS/PE			NS/PE
West Los Angeles	NS/PE	MS/HC		NS/PE			

¹ Site terminated in 2014.

² New site in 2014.

TABLE 3. FRM/FEM Criteria Pollutant Monitoring Purposes

MONITORING PURPOSE							
BK – Background HC – High Concentration TP – Pollutant Transport EX – Population Exposure SO – Source Impact				RC – Representative Concentration RM – Real-Time Reporting/Modeling TR – Trend Analysis CP – Site Comparisons CO - Collocated			
Location	CO	NO2	SO2	O3	Manual PM10	Manual PM2.5	Pb
Anaheim	TR	TR/RC		TR	TR/RC	TR/EX	
Anaheim Route 5 Near Road ²	SO/HC	SO/HC					
ATSF (Exide)							SO
Azusa	TR	TR/RC		TR	TR	TR/EX	
Banning Airport		TP/RC		TP	TP		
Big Bear						EX/SO/TP	
Closet World (Quemetco)							SO
Burbank ¹	TR	TR/RC	TR	TR	TR/RC	TR/EX	
Compton	TR/HC	TR/RC		TR/RC		EX/RC	EX
Costa Mesa	RC	TR/RC	TR	RC			
Crestline				HC	TP/RC		
Fontana	RC	TP/RC	TR	RC	HC	EX/TP	
Glendora	RC	TR/RC		HC			
Indio				TP	HC/CO	TP/EX	
La Habra	RC	TR/RC		RC			
Lake Elsinore	TP/RC	TP/RC		TP/RC			
LAX Hastings	BK	BK	BK	BK	BK		BK
Long Beach (Hudson)	TR	TR/RC	TR/HC	TR	TR/RC		
Long Beach (North)						EX/HC	
Long Beach Route 710 Near Road ²		SO/HC				SO/HC	
Los Angeles (Main St.)	SO/RC	SO/HC	TR	TR/RC	TR/RC/CO	EX/HC/CO	EX/CO
Mira Loma (Van Buren)	TR/RC	TR/RC		TR/HC	HC	EX/HC/CO	
Mission Viejo	RC			TR/RC	TR/RC	EX/RC	
Norco					TR/RC		
Ontario Fire Station ¹					HC/CO	EX/RC	
Ontario Etiwanda Near Road ²	SO/HC	SO/HC					
Ontario Route 60 Near Road ²		SO/HC				SO/HC	
Palm Springs	TP/RC	TP/RC		TP	TP/HC	EX/TP	
Pasadena	TR/RC	TR/HC		TR/RC		EX/RC	
Perris				TP	TR		
Pico Rivera #2	RC	HC		HC		EX/RC	EX
Pomona	RC	RC		HC			
Redlands				TP/RC	TP/RC		
Rehrig (Exide)							SO/CO
Reseda	RC	TR/RC		HC		EX/RC	
Riverside ¹	HC	TR/RC				EX/HC	EX/CO
Rubidoux	TR/RC	TR/RC	TR	TR/HC	TR/HC/CO	EX/TR/HC/CO	EX
San Bernardino	TR/RC	TP/RC		TR/HC	TR/HC	EX/TR	EX
Santa Clarita	RC	TP/RC		TP/HC	RC	EX/RC	
South Long Beach					HC	EX/SO	EX
SA RECYCLING							SO/HC
Uddelholm (Trojan Battery)							SO
Temecula				TR/HC			
Upland	RC	TR/RC		TR/RC			EX
West Los Angeles	RC	TR/HC		RC			

¹ Site terminated in 2014.

² New site in 2014.

TABLE 4. Continuous PM₁₀/PM_{2.5} Monitoring Purpose, Site Type and Spatial Scales

<u>SITE TYPE</u>	<u>SPATIAL SCALE</u>	<u>INSTRUMENT TYPE</u>
HC – High Concentration	MI – Microscale	TEOM
PE – Population Exposure	NS – Neighborhood Scale	BAM (NON-FEM)
BK - Background		BAM (FEM)

MONITORING PURPOSE

SO – Source Impact	RM – Real-Time Reporting/Modeling
TP – Pollutant Transport	SPM – Special Purpose Monitoring
TR – Trend Analysis	CO - Collocated

Location	Continuous PM ₁₀				Continuous PM _{2.5}				PM ₁₀ – 2.5
	Type	Purpose	Site Type	Scale	Type	Purpose	Site Type	Scale	Operational
Anaheim	BAM/FEM	RM/TR	PE	NS	BAM/FEM	RM/TR	PE	NS	
Banning Airport					BAM/NON-FEM	RM	PE	NS	
Burbank ¹	TEOM/FEM	RM/TR	PE	NS	BAM/FEM	RM/TR	PE	NS	
Crestline					BAM/NON-FEM	RM	PE	NS	
Glendora	BAM/FEM	RM	PE	NS	BAM/NON-FEM	RM	PE	NS	
Indio	TEOM/FEM	RM	HC	NS					
Lake Elsinore	TEOM/FEM	RM	PE	NS	BAM/NON-FEM	RM	PE	NS	
Long Beach Route 710 Near Road ²					BAM/FEM	RM/SO			
Los Angeles (Main St.)	BAM/FEM	RM/TR	PE	NS	BAM/FEM	RM	HC	NS	Yes
Mira Loma (Van Buren)	BAM/FEM	RM	HC	NS	BAM/FEM	RM	HC	NS	
Ontario Route 60 Near Road ²					BAM/FEM	RM/SO			
Palm Springs	TEOM/FEM	RM/TP	HC	NS					
Reseda					BAM/NON-FEM	RM	PE	NS	
Riverside ¹	BAM/FEM	RM	HC	NS	BAM/NON-FEM	RM	HC	NS	
Rubidoux	TEOM/FEM	RM/TR	HC	NS	BAM/FEM & NON-FEM	RM/TR/CO	HC	NS	Yes
San Bernardino	TEOM/FEM	RM/TR	HC	NS					
Santa Clarita					BAM/NON-FEM	RM	PE	NS	
Saul Martinez Elementary	TEOM/FEM	RM/CO	PE	NS					
South Long Beach					BAM/FEM	RM/SO	PE	NS	
Temecula					BAM/NON-FEM	RM	PE	NS	
Upland	BAM/FEM	RM	PE	NS	BAM/NON-FEM	RM	PE	NS	

¹ Site terminated in 2014.

² New site in 2014.

A brief description of the criteria pollutant and program monitoring networks are provided below:

OZONE (O₃)

The SCAQMD operates 29 sites where O₃ measurements are made as part of the Air Monitoring Network. O₃ sites are spread throughout the SCAB with highest concentrations measured inland. Figure 1 in Appendix A shows the spatial distribution of these sites and Table 16 shows the minimum monitoring requirements.

PM₁₀

Size-selective inlet manual high volume samplers are operated at 19 sites to meet the requirements for PM₁₀ Federal Reference Method (FRM) sampling. The PM₁₀ monitoring network contains five sites within 25% of the Federal NAAQS as shown in the 2014 Air Quality Data Table (<http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year>), Figure 9. The Indio, Mira Loma and Rubidoux sites are designated PM₁₀ collocated and shown in Table 24. All PM₁₀ FRM monitors operate on a one day in six day schedule, with the exception of Indio, Mira Loma and Rubidoux which operate on one day in three day schedule. The Anaheim and Mira Loma sites are shown as expected maximum value sites by MSA in Table 18. Consequently, as expected maximum concentration sites, Mira Loma and Anaheim meet the minimum sampling schedule requirement shown in 40 CFR §58.12. The remaining sites meet or exceed the minimum 6 day sample schedule requirement.

PM₁₀ continuous analyzers are operated at 10 sampling sites. These real-time devices are capable of making hourly particulate concentration measurements. Table 4 describes the monitor type, site type, monitoring purpose, and spatial scale for continuous particulate analyzers. Figure 2 in Appendix A shows the spatial distribution of the sampling sites and Table 18 shows the minimum monitoring requirements. Real-time monitors, for the most part, are clustered in the high concentration areas, with two located in the desert area where wind-blown crustal material has caused exceedances of the twenty-four hour standard during exceptional events. In downwind areas of the SCAB, a large fraction of particulate is formed in the atmosphere; PM₁₀ reaches maximum levels during late summer through early winter months.

Where both 24 hour PM₁₀ FRM samplers and PM₁₀ FEM continuous analyzers are deployed together, they are sited as collocated for data comparison purposes where possible. The 24 hour FRM PM₁₀ sampler remains the primary analyzer used for attainment purposes.

PM₁₀-2.5

PM₁₀-2.5 (PM Coarse) is required at NCore sites only and is derived from the continuous BAM PM₁₀ and PM_{2.5} particulate monitors at those sites. The Purpose, Site Type and Scale are similar to the continuous PM₁₀ and PM_{2.5} instruments from which data is calculated. PM Coarse is currently measured at the Los Angeles (Main St.) and Rubidoux sites and is shown in Table 4.

NITROGEN DIOXIDE (NO₂)

The area wide NO₂ network consists of 23 sites. These sites are mostly located in areas of highest expected NO₂ concentrations. The Near Road monitoring network consists of four sites which were implemented in January of 2014 and 2015. These sites are located adjacent to the most heavily traveled roadways identified in the basin. The spatial distribution of NO₂ monitors is shown in Figure 3 in Appendix A and minimum monitoring requirements are shown in Table 19. Additionally, the Regional Administrator identified 40 NO₂ sites nationwide with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. The Regional Administrator in collaboration with SCAQMD identified the Los Angeles (Main), Long Beach (North) and San Bernardino sites from the existing area-wide monitoring network to meet this requirement (58.10[a][5]). On September 30, 2013, the continuous monitors including NO₂ were discontinued at Long Beach (North) due to termination of the lease by owner. SCAQMD is proposing re-designation of Compton as a RA 40 site and is discussed further in Appendix D. SCAQMD is in the process of identifying a replacement monitoring location for Long Beach (North) in collaboration with Long Beach Department of Public Health and also considering potential consolidation with nearby sites. Review of 1992 through 2012 NO₂ data shows the State and Federal standards for NO₂ were not exceeded.

CARBON MONOXIDE (CO)

Area wide CO monitors measure concentrations at 23 locations, and 2 near road monitors operate within the SCAQMD ambient air monitoring network. Figure 4 in Appendix A shows the spatial distribution of these sites. CO emissions, primarily from motor vehicles, show a pattern consistent with major freeway arteries. A review of data for 2013 shows State and Federal standards for CO were not exceeded.

SULFUR DIOXIDE (SO₂)

SO₂ monitors are located at 6 sites. Figure 5 in Appendix A shows the spatial distribution of the sites. Most SO₂ emissions come from Federal transportation sources such as marine vessels. The monitors are clustered mostly in the areas where these sources are located.

On June 22, 2010 EPA strengthened the SO₂ National Ambient Air Quality Standard (NAAQS). Network design requirements included new minimum requirements be determined by the Population Weighted Emissions Index (PWEI).

The PWEI shall be calculated by States for each CBSA they contain or share with another State or States for use in the implementation of or adjustment to the SO₂ monitoring network. The PWEI shall be calculated by multiplying the population of each CBSA, using the most current census data or estimates, and the total amount of SO₂ in tons per year emitted within the CBSA area, using an aggregate of the most recent county level emissions data available in the National Emissions Inventory (NEI) for each county in each CBSA. The resulting product shall be divided by one million, providing a PWEI value, the units of which are million persons-tons per year. For any CBSA with a calculated PWEI value equal to or greater than 1,000,000, a minimum of three SO₂ monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than

100,000, but less than 1,000,000, a minimum of two SO₂ monitors are required within that CBSA and for any CBSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO₂ monitor is required within that CBSA.

TABLE 5. PWEI Calculation and Minimum Required SO₂

CBSA	Population Estimate	NEI SO ₂ Emmissions	PWEI Value	Minimum Required SO ₂
31080	13,131,431	6,102.45	80,134	1
40140	4,380,878	2,307.02	10,107	1

SCAQMD exceeds the minimum requirement for SO₂ monitors; the Federal standard has not been exceeded for nearly 33 years.

PARTICULATE LEAD

Total Suspected Particulate (TSP) Pb measurements are collected at 12 sites as part of the particulate network; 4 of the sites are Source Impact for Pb, and the remaining 8 sites measure ambient Pb.

In 1990, the EPA requested that the SCAQMD collect ambient air particulate samples near several large Pb handling (battery recycling) facilities. Long-term source impacted monitoring began in 1991. A facility in the City of Industry exceeded the Federal ambient particulate Pb standard during the second quarter of Fiscal Year 1991-92. Pb monitoring at a facility in the City of Torrance ended in 1993 when measurements were consistently below the ambient standard. Sampling ended at a facility in the City of Commerce in 2006 when the business was closed. Out of the facilities currently being monitored, the facility in the City of Vernon exceeded the old Federal ambient particulate Pb standard (1.5 ug/m³ quarterly) during the first quarter of 2008; the other facility was found to remain below this level.

The Rehrig (Exide) microscale site typically measures the highest Pb concentrations in the monitoring network. A notice of violation issued was on April 23, 2014 for, “Discharging into the atmosphere lead emissions exceeding 0.150 µg/m³ averaged over 30 days”. On March 11, 2015, Exide agreed to immediately and permanently close the Vernon site in an agreement with the assistant U.S. attorney and chief of environmental crimes. Monitoring continues at the site and it has been designated as a collocated monitoring location for the source oriented Pb monitoring network. The Los Angeles, and Compton sites are designated as collocated for the area wide Pb monitoring network; collocation requirements are shown in Table 24. During 2014 the Riverside site was designated as a collocated site for Pb but on 3/17/15 the lease was not renewed due to safety considerations. Since that time, the Compton site has been re-designated as a collocated site for Pb. The SCAQMD continues to exceed the minimum monitoring requirements with the closure of the Riverside monitoring site. The spatial distribution of these sites is shown in Figure 6 in Appendix A.

On November 12, 2008, the EPA issued final revisions to the NAAQS for Pb. Network design requirements included monitoring for sources of Pb (source oriented monitoring) and urban Pb monitoring (non-source oriented). To meet this requirement, a source oriented site was established on January 1, 2010 at the Van Nuys Airport and monitoring continues at the sites surrounding the Exide (Vernon), Quemetco (Industry), and the Trojan Battery facilities. Existing urban Pb monitoring conducted at Compton, LAX Hastings, Los Angeles (Main), Pico Rivera, Riverside Magnolia, Rubidoux, San Bernardino, South Long Beach, and Upland exceed the minimum monitoring requirements.

The final rule for Pb went into effect on January 26, 2011. In the final rule the Van Nuys Airport was no longer included on the list of airports where Pb monitoring was required, and a more recent emissions inventory showed Pb emissions less than the minimum monitoring requirement of 1.0 ton per year. The landowner advised SCAQMD the lease would not be renewed at the end of the three year contract period. Data review from the Van Nuys Airport Pb site showed no exceedances of the three month rolling average during the monitoring period. In consultation EPA the site was discontinued on June 4, 2013 based upon conditions cited in 40 CFR 58 Appendix D 4.5.

The most recent NEI data (2011) as of 5/1/2015 shows no sites exceed the 1.0 tpy requirement (<http://www.epa.gov/ttnchie1/net/2011inventory.html>) threshold requiring a monitoring plan:

TPY	State	County	Facility
0.8	CA	Los Angeles	LONG BEACH-DAUGHERTY FIELD AIRPORT
0.68	CA	Los Angeles	VAN NUYS AIRPORT
0.58	CA	Orange	JOHN WAYNE AIRPORT
0.58	CA	San Bernardino	CHINO AIRPORT

Photochemical Assessment Monitoring Stations

The Photochemical Assessment Monitoring Stations (PAMS) network was initiated in June 1994 at Pico Rivera and Upland. During 1995 sites were established at Banning and Azusa to determine speciated hydrocarbon O₃ precursor compounds in ambient air. PAMS monitoring at Hawthorne commenced in June 1997 and the Burbank station became a PAMS site in July 1997. In May 2001, the Santa Clarita location was established as a PAMS site. In April 2004, the Hawthorne site was replaced by LAX Hastings, due to the end of a property lease. In August 2005, the Pico Rivera station moved to a new location one half mile south of the previous site, also due to the end of the property lease.

On October 17, 2006, the EPA issued final amendments to PAMS monitoring requirements in 40 CFR § 58. The changes made to the rule were to implement recommendations made by the PAMS workgroup formed to assess the program. The workgroup recommended changes be made to site type and monitoring objectives. During September 2008, a report from the EPA PAMS network assessment project workgroup was issued. The objectives of the workgroup were to assess how well the current PAMS network was meeting monitoring objectives, determine which sites are most useful for meeting objectives, identify potentially

redundant, ineffective, or unnecessary sites, and to assess other enhanced O₃ monitoring activities that may prove useful.

Site Types are defined as:

- Type 1 sites are established to characterize upwind background and transported O₃ and its precursor concentrations entering the area and will identify those areas which are subjected to transport.
- Type 2 sites are established to monitor the magnitude and type of precursor emissions in the area where maximum precursor emissions are expected to impact and are suited for the monitoring of urban air toxic pollutants.
- Type 3 sites are intended to monitor maximum O₃ concentrations occurring downwind from the area of maximum precursor emissions.
- Type 4 sites are established to characterize the downwind transported O₃ and its precursor concentrations exiting the area and will identify those areas which are potentially contributing to overwhelming transport in other areas.

To address regulatory changes, site-specific observations from the PAMS network assessment project, and potential synergies between programs, SCAQMD made the following changes in June 2009 to the PAMS monitoring network:

- Burbank was reclassified from Type 2/1 to Type 2. This change addressed the National PAMS Network Assessment observation that Burbank should be reclassified to a Type 2 precursor site. The recommendation is consistent with the heavily urbanized/industrialized area, which is impacted by high levels of O₃ precursor emissions.
- Santa Clarita was reclassified as Type 3 from Type 2. Although the National PAMS Network Assessment observed that Santa Clarita was consistent with a Type 2 site, recent data was more consistent with a Type 3 maximum O₃ concentration site rather than a Type 2 O₃ precursor site.
- Banning was relocated to Los Angeles (Main). The National PAMS Network Assessment observed that Banning had the lowest O₃ concentrations of all the Type 2 sites and should be reclassified to a Type 3 or 4 site. Instead, to create synergies between programs, SCAQMD relocated the Banning PAMS site to the Los Angeles (Main) site as Type 2. This satisfies the EPA recommendation for use of the same monitoring platform and equipment to meet the objectives of multiple programs. Los Angeles (Main) is also a National Air Toxics Trends Station (NATTS), a National Core-Multi-pollutant Monitoring Station (NCore), and a Speciation Trends Network (STN) site.
- Azusa was reclassified from Type 3 to Type 2. This proposed change addresses the National PAMS Network Assessment observation that Azusa has high Volatile Organic Compounds (VOC) and Oxides of Nitrogen (NO_x) concentrations, with lower O₃ concentrations. The site now more closely resembles a Type 2 O₃ precursor site.
- Upland was relocated to the Rubidoux site. The National PAMS Network Assessment observed that Upland was no longer consistent with a Type 4 site and recommended reclassification to Type 3. SCAQMD relocated the Upland PAMS site to Rubidoux as

a Type 3 location where synergies can be created among the NATTS, NCore, and the STN programs.

- LAX Hastings and Pico Rivera remained unchanged.

Currently, manual VOC canisters are in operation at the Azusa, LAX Hastings, Rubidoux, Los Angeles (Main), and Santa Clarita air monitoring stations. Under this program, during the intensive season from July 1 until September 30, VOC canisters were run every three hours for a period of twenty-four hours every 3rd day and a twenty-four hour sample is run every 6th day. During the non-intensive season from October 1 through June 30, twenty-four hour VOC canister samples were run every 6th day.

SCAQMD upper air meteorological monitoring stations are established at Los Angeles International Airport (LAX), Ontario International Airport (ONT), Moreno Valley (MOV) at the Moreno Valley Municipal Water Treatment Plant in Riverside County, Irvine (IRV) at the University of California Research and Extension Center, and Pacoima at Whiteman Airport (WHP). The upper air stations use a combination of remote sensing and surface meteorological instrumentation, including the Scintec (formerly Radian/URS and Vaisala) LAP-3000 radar wind profiler with a Radio Acoustic Sounding System (RASS), the Atmospheric Systems Corporation (formerly AeroVironment Inc.) mini Sodar acoustic wind profiler, and tower-mounted meteorological measurements of wind, pressure, temperature, relative humidity, solar radiation, and ultraviolet radiation. Due to the age of the LAX upper air instrumentation and costly component failures, SCAQMD has replaced the LAX radar wind profiler instrumentation with that from Whiteman Airport. Surface meteorology and mini-Sodar instruments are still operational at the Whiteman Airport upper air station.

During April 2013, a system audit was conducted by the EPA, which assessed the SCAQMD NATTS/PAMS programs. The audit found no major issues with the operation of the network.

On November 25, 2014, the EPA proposed to strengthen the National Ambient Air Quality Standards (NAAQS) for ground-level ozone, based on extensive scientific evidence about ozone's effects. Proposed changes to the rule include PAMS monitoring requirements in 40 CFR § 58 which includes recommendations made by the PAMS national working group. Proposed changes include (Cavendar, U.S. EPA, 2015):

- Reduce number of required sites to 1 per area but expand PAMS applicability to all O3 non-attainment areas
- Require PAMS at NCore sites in O3 non-attainment areas but allow for Regional approval of alternative site (e.g., existing type 2 PAMS sites)
- Require sites to collect hourly VOC data
- Require sites to collect carbonyls (formaldehyde, etc.)
- Require sites to measure “true NO2” in addition to current NOy
- Change requirement for upper air meteorology to requirement for measuring mixing height

The proposed rule closed for comment and the final form of the rule is expected to be released later in 2015.

Although SCAQMD has used the PAMS data for trends analysis, trajectory modeling, and source emissions inventory reconciliation, SCAQMD has conducted an assessment of its PAMS program. The assessment indicated that although the existing program provides a robust data set, the measurement program can be modernized to compliment current and future U.S. EPA program requirements, strengthening the connection between the PAMS measurements objectives to better comprehension of ozone in the South Coast Basin. Thus, in the next two years, SCAQMD will focus its resources on optimizing the program, evaluating technologies, and shifting resources to prepare for the revised program. The general concept will be to conduct intensive one-year large scale Specialized PAMS (SPAMS) measurements every several years and in between SPAMS, conduct reduced core PAMS program during non-intensive years.

During non intensive years the goal is to track Annual statistics, trends (yearly, seasonally, monthly, weekly, daily, hourly), spatial distribution, comparison to other federal programs, and comparison data for special projects. Non intensive monitoring is proposed at four sites:

- Los Angeles (Main street): Proposed required by U.S. EPA, Station Leveraging, Current Type 2 site
- Azusa: Current Type 2 site, Trend site
- Rubidoux: Proposed required by U.S. EPA, Station leveraging, Current Type 3 site.
- Long Beach: Port/ Refineries activity and emissions

During the periodic intensive one year SPAMS intensive period, the goal is to conduct measurements with better spatial resolution (both vertical and horizontal), establish trend data (yearly, seasonally, monthly, weekly, daily, hourly) – develop control strategies, emissions inventory evaluations, local scale studies, full scale photochemical transport modeling, VOC/NO_x profiling, and background characterization. Intensive years would take place on Air Quality Management Plan (AQMP) years. More detail on the SPAMS program will be provided in next year's annual network plan.

The 2015 PAMS network monitoring objectives and requirements are summarized in Table 6 and Table 23 Figure 7 in Appendix A which shows the distribution of the PAMS network. Starting July 1, 2015 SCAQMD will not conduct the intensive season sampling schedule for PAMS sites but will continue the current non intensive schedule for all current PAMS sites. During this non-intensive season twenty-four hour VOC canister samples are run every 6th day and twenty-four hour carbonyl samples are run every 6th day. Rubidoux is a collocated site for VOC canister sampling and Pico Rivera is a collocated site for VOC canister and carbonyl sampling. Instead, SCAQMD will be evaluating implementation options for the revised PAMS/ SPAMS programs by participating in the U.S. EPA PAMS GC assessment, upgrading its air monitoring network infrastructure, preparing mobile platforms, and evaluating instruments and methods.

TABLE 6. PAMS Network

Site Type	Date Established as PAMS	Site / AQS ID#	January 1 to December 31		Additional Requirements
			VOC	Carbonyl	
1	04/01/2004	LAX Hastings (replaced Hawthorne)	1 x 24 hr sample every 6 th day	No Sampling	
2	06/01/1995	Azusa	1 x 24 hr sample every 6 th day	No Sampling	No/NOx required
2	07/01/1997	Burbank	1 x 24 hr sample every 6 th day	1 x 24 hr sample every 6 th day	
2	06/01/2009	Los Angeles (Main)	1 x 24 hr sample every 6 th day	1 x 24 hr sample every 6 th day	Trace level CO required at one type 2 site.
2	08/01/2005	Pico Rivera #2	1 x 24 hr sample every 6 th day	1 x 24 hr sample every 6 th day	
3	06/09/2009	Rubidoux	1 x 24 hr sample every 6 th day	No Sampling	NOy required
3	05/01/2001	Santa Clarita	1 x 24 hr sample every 6 th day	1 x 24 hr sample every 6 th day	

MONITORING OBJECTIVES:

- 1 – Upwind and background characterization site (type 1 or 3)
- 2 – Maximum O3 precursor emissions impact site or above 8 hr zone
- 3 – Maximum O3 concentration site
- 4 – Extreme downwind monitoring site

MONITORING REQUIREMENTS:

- One type 1 or type 3 site required per area
- One type 2 site required per area
- No type 4 required

REDUCED REQUIREMENTS:

- Speciated VOC only required at type 2 and one other
- Carbonyl only required in areas classified as serious
- NO/NOx required only at type 2
- NOy required at one site per PAMS area (type 1 or 3)

PM2.5

A network of 17 FRM samplers was first implemented in January 1999. On December 26, 1999, a second Coachella Valley PM2.5 sampling site was established in Palm Springs. On June 20, 2003, PM2.5 sampling began at the South Long Beach site. The Mira Loma site was added during October, 2005 and the Route 710 Long Beach and Route 60 Ontario near road sites were added during January, 2015. During 2014 the Riverside, Burbank, and Ontario sites were discontinued due to termination of leases. This brings the total number of PM2.5 FRM sampling sites to 19. The sites are depicted in Figure 8, Appendix A and the starting date of each sampler is listed in Table 7. In March 2012, a change was made relocating the collocated PM2.5 monitor from Indio to the Mira Loma (Van Buren) site. This change was made following approval from EPA. Collocated sampling sites include Rubidoux, Central Los Angeles, and Mira Loma (Van Buren). Of the collocated sites, all three are located at sites which have exceeded Federal NAAQS as shown in Figure 9, and Appendix A, 2013 Air Quality Data Table. The latest data can be found at: (<http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year>). Manual PM2.5 monitors are sited as neighborhood scale and population exposure representing community wide air quality with multiple sites are listed as population exposure. Because all of SCAQMD is in non-attainment for PM2.5, most of the sites are in areas of poor air quality therefore multiple sites are listed as population exposure and high concentration. If a PM2.5 network modification were to be implemented for a site that was in exceedence of the PM2.5 NAAQS levels, SCAQMD would notify U.S. EPA Region IX via written communication. Public notice of network modifications occurs as part of the annual network plan process which is stated in the annual network plan. All sites in the Network using FRM samplers are suitable for comparison against the annual PM2.5 NAAQS.

During April 2009, SCAQMD completed minor changes to the FRM monitoring schedule to enhance Federal Equivalent Method (FEM) Beta Attenuation Monitor (BAM) comparisons. On April, 16th, 2009 the Burbank and Mira Loma (Van Buren) FRM samplers changed to daily sampling from the 1-in-3 day schedule and the Azusa location changed from every day sampling to 1-in-3 day sampling. Daily design value sites are shown in Table 17a as the Los Angeles and Mira Loma sites. A replacement site is currently being sought for Burbank due to termination of lease and the Mira Loma site meets the minimum daily monitoring requirement. Monitors exceed the minimum NCore 1 in 3 requirements at the Rubidoux and Los Angeles (Main) sites. The remaining sites adhere to the 1 in 3 schedule with the exception of Big Bear which was approved at the inception of the PM2.5 program as a 1 in 6 site. The Federal minimum monitoring requirements for PM2.5 are being met and/or exceeded by the SCAQMD PM2.5 monitoring network.

Continuous PM2.5 Met One BAMs were first deployed in fiscal year 2001–02. Fifteen monitors are now operating in the SCAB, two at Rubidoux (FEM & Non FEM BAM), and one each at Anaheim, Los Angeles, South Long Beach, Mira Loma (Van Buren), and Banning sites. In January 2006, two additional samplers were added at Lake Elsinore and Glendora as part of the Children's Health Study. As proposed in the 2008 network plan, FEM BAM monitors were deployed during October 2008, at the Anaheim, Burbank, Los

Angeles (Main), Mira Loma (Van Buren), Rubidoux, and South Long Beach sites. Relocated NON-FEM BAM samplers were installed at Reseda, Riverside Magnolia, Santa Clarita, Crestline, and Upland. A NON-FEM BAM was collocated with a FEM BAM at Rubidoux. An additional NON-FEM BAM sampler was deployed at Temecula during July, 2010. In 2011, all FEM BAMs have been reclassified from special purpose monitors to SLAMS under 40 CFR § 58.20. During 2014 the Burbank and North Long Beach sites were discontinued due to termination of leases.

In 2014, SCAQMD conducted a PM_{2.5} Continuous Monitor Comparability Assessment in accordance with the PM NAAQS rule published on January 15th, 2013 (78 FR 3086). Specific to the provisions detailed in §58.10 (b)(13) and §58.11 (e), the assessment results indicate that all of the SCAQMD PM_{2.5} Continuous Monitors do not meet the criteria to be compared against the NAAQS. Thus, SCAQMD requested a waiver to exclude PM_{2.5} continuous monitor data from NAAQS comparison. Meanwhile, SCAQMD is conducting comparison studies of newer technology to determine their ability to meet the criteria to be compared against the NAAQS. At such time when the assessment indicates that the FEM monitors are within the acceptance criteria, then U.S. EPA will be notified of the results and the AQS parameters will be changed to indicate that the data will be eligible for comparison to the NAAQS upon U.S. EPA approval.

Coarse particulate matter measurements (PM_{10-2.5}) are required at NCore sites. To meet this requirement SCAQMD measures this value utilizing the continuous BAM monitors at the Los Angeles (Main) and Rubidoux air monitoring sites. These monitors are shown in Table 4.

Where both 24 hour FRM PM_{2.5} samplers and FEM PM_{2.5} continuous analyzers are deployed together, they are sited as collocated for data comparison purposes if the FEM analyzer meets the acceptance criteria under 78 FR 3086.

TABLE 7. Manual PM_{2.5} FRM Monitoring Stations Assigned Site Numbers

Location	Site Code	ARB No.	AQS No.	Start Date	Schedule
Anaheim	ANAH	30178	060590007	01/03/99	Daily
Azusa	AZUS	70060	060370002	01/04/99	1-in-3
Big Bear	BGBR	36001	060718001	02/08/99	1-in-6
Burbank ¹	BURK	70069	060371002	Closed	
Compton	COMP	70112	060371302	11/08	1-in-3
Fontana	FONT	36197	060712002	01/03/99	1-in-3
Indio	INDI	33157	060652002	01/30/99	1-in-3
Long Beach (North)	LGBH	70072	060374002	01/03/99	Daily
Long Beach Route 710 Near Road ²	W710	70032	060374008	01/01/15	Daily
Los Angeles “A” (Main St.)	CELA	70087	060371103	01/03/99	Daily
Los Angeles “B” (Main St.)	CELA	70087	060371103	01/06/99	1-in-6
Mira Loma (Van Buren) “A”	MRLM	33165	060658005	11/09/05	Daily
Mira Loma (Van Buren) “B”	MRLM	33165	060658005	03/08/12	1-in-6
Mission Viejo	MSVJ	30002	060592022	06/15/99	1-in-3
Ontario Fire Station ¹	ONFS	36025	060710025	Closed	
Ontario Route 60 Near Road ²	60NR	36036	060710027	01/01/15	Daily
Palm Springs	PLSP	33137	060655001	12/26/99	1-in-3
Pasadena	PASA	70088	060372005	03/04/99	1-in-3
Pico Rivera #2	PICO	70185	060371602	09/12/05	1-in-3
Reseda	RESE	70074	060371201	01/24/99	1-in-3
Riverside ¹	RIVM	33146	060651003	Closed	
Rubidoux “A”	RIVR	33144	060658001	01/03/99	Daily
Rubidoux “B”	RIVR	33144	060658001	01/03/99	1-in-6
San Bernardino	SNBO	36203	060719004	01/03/99	1-in-3
South Long Beach	SLGB	70110	060374004	06/20/03	Daily

¹ Closed in 2014.² New in 2014

FRM PM_{2.5} sampler remains the primary analyzer used for attainment purposes and continuous analyzers are designated as audit samplers unless the primary 24 hour FRM PM_{2.5} is offline then continuous FEM analyzer data can be substituted if the FEM analyzer meets the acceptance criteria under 78 FR 3086.

PM_{2.5} speciation sampling is also a part of the SCAQMD PM_{2.5} program. Collocated STN Met One SASS PM_{2.5} and one SCAQMD Met One SASS PM_{2.5} speciation samplers were deployed in March 2001 at Rubidoux. An additional STN Met One SASS and collocated SCAQMD SASS samplers were deployed at Central Los Angeles in 2002. In 2003, SCAQMD SASS PM_{2.5} speciation samplers were installed at Fontana and Anaheim air monitoring sites. Analysis of the filters from the SCAQMD ambient network SASS samplers are being conducted at SCAQMD’s laboratory. The STN SASS sample filters are shipped to Research Triangle Institute (RTI) for analysis. This approach has the concurrence of CARB and EPA, Region IX.

National Air Toxics Trends Station (NATTS)

The NATTS program was developed to fulfill the need for long-term Hazardous Air Pollutant (HAP) monitoring data of consistent quality nationwide. SCAQMD has conducted several air toxics measurement campaigns in the past, which demonstrated the variety and spatial distribution of air toxics sources across SCAB. A single air toxics measurement site cannot reflect the levels and trends of air toxics throughout the SCAB. For this reason, two NATTS sites are used to characterize the SCAB's air toxics levels. The first site is a central urban core site in Los Angeles that reflects concentrations and trends due primarily to urban mobile source emissions. A second, more rural, inland site at Rubidoux captures the transport of pollutants from a variety of upwind mobile and industrial sources in the most populated areas of the air basin. NATTS monitoring began in February 2007 and continues at the Los Angeles (Main) and Rubidoux air monitoring sites. During April 2013, a system audit was conducted by the EPA, which assessed the SCAQMD NATTS program. The audit found no major issues with the operation of the network.

NCore

NCore monitoring rules required that SCAQMD make NCore sites operational by January 1st, 2011. To meet this goal, SCAQMD installed trace level analyzers for CO, NOY and SO₂ at the Rubidoux and Central Los Angeles sites. Continuous PM₁₀ and PM_{2.5} BAM are utilized for PM₁₀-PM_{2.5} measurements at both sites. Final calibrations were completed at the Rubidoux site January, 2011 and at the Central Los Angeles during May, 2011. Both the Los Angeles and Rubidoux sites are NATTS and PAMS monitoring locations.

Special Programs

Special monitoring programs are conducted for rule compliance purposes, to characterize the levels of toxic air contaminants and other criteria pollutants in sub-regional areas or communities in the SCAB, or to support modeling and planning efforts. The following is a list of special monitoring programs that were active during the past year. Note that this is being provided for informational purposes only.

MATES IV

The SCAB is a highly urbanized area home to about seventeen million people who own and operate about eleven million motor vehicles, and contains some of the highest concentrations of industrial and commercial operations in the country. In 1986, SCAQMD conducted the first MATES study to determine the SCAB-wide risks associated with major airborne carcinogens. At the time, the state of technology was such that only ten known air toxic compounds could be analyzed. In 1998, a second MATES study (MATES II) was conducted; MATES II included a monitoring program of 40 known air toxic compounds, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize health risks from hazardous air pollutants. In April 2004, the SCAQMD conducted the third MATES study (MATES III) to assess the ambient levels of airborne compounds linked to adverse health effects in humans. And in June, 2012 SCAQMD began the MATES IV study and concluded in June, 2013. A draft final report was issued during 2014 (<http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv>) for public comment, and the final report has been released May 1, 2015.

The MATES IV Study included a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the Basin. The local scale component of the study continued to focus on the carcinogenic risk from exposure to air toxics but will not estimate mortality or other health effects from particulate exposures. A focus of MATES IV is the inclusion of measurements of ultrafine particle concentrations. In addition, shorter-term measurements are being conducted at various locations to assess localized impacts of combustion sources. The focus of these measurements were on assessing the exposures to ultrafine particles and black carbon very near sources such as airports, freeways, rail yards, busy intersections, and warehouse operations.

The goal of MATES IV was to enhance the spatial resolution of previous studies by characterizing the ambient concentration of selected toxic air compounds in communities with varying land-type usage, such as residential, industrial, and commercial, as well as gradients from source areas downwind to receptor areas.

For trend analysis the MATES IV study utilized the same ten fixed monitoring sites used in the MATES III study. These monitoring locations are the Anaheim, Burbank, Compton, Fontana, Huntington Park, North Long Beach, LA Main Street, Pico Rivera, Rubidoux, and West Long Beach monitoring sites. As of June 2013 monitoring at these ten fixed sites has been completed. MATES IV added Ultra Fine Particulate (UFP) and Black Carbon (BC) continuous measurements.

The Local Scale component to the MATES IV study utilizes mobile monitoring platforms deployed for short term measurements of selected compounds near sources such as airports, freeways, rail yards, busy intersections, and warehouse operations.

Fugitive Dust Study

In support of SCAQMD Rule 403 - Fugitive Dust, SSI PM10 samplers are deployed on an episodic basis upwind and downwind of potential sources as required under Rule 403. Since 2003, periodic sampling has been conducted around gravel quarries and other industries which seem to be producing large volumes of dust.

Hexavalent Chrome

The SCAQMD has an ongoing program to collect ambient hexavalent chromium samples in the vicinity of several chrome plating and cement production facilities located throughout the SCAB. Monitoring continues at Newport Beach, Riverside, and other locations throughout the SCAQMD jurisdiction.

GERDAU-TAMCO

GERDAU North America acquired the TAMCO Rancho Cucamonga steel mini mill in October, 2010. In 2012 an environmental audit was conducted at the facility and found discrepancies in reported emissions with respect to SO_x and NO_x. Further, it was suspected that Pb emissions can contribute to an exceedence of the NAAQS. SCAQMD conducted inspections of the facility to address issues and continues monitoring for Pb, Cr+6, and other metals at the facility. Monitoring efforts at TAMCO currently measure Pb, Total Metals and Cr+6 on a 3 day schedule.

Salton Sea Monitoring

On Sunday September 9, 2012, a strong thunderstorm over the Salton Sea caused odors to be released and transported to the northwest, across the Coachella Valley and through the Banning Pass into the SCAB. The odors also crossed through the mountain passes west of the Salton Sea and into the Temecula Valley. The following day, SCAQMD received over 235 complaints of sulfur and rotten egg type odors

As the Salton Sea recedes, the potential exists for more of these large-scale odor events to occur. SCAQMD has installed PM10 and H2S air monitors at Saul Martinez Elementary School and the Imperial Irrigation District's Torrez-Martinez site to monitor the type of expected nuisance pollutants which are released from the Salton Sea. The primary objective of this monitoring network is to place monitoring resources at a lakeside location where peak hydrogen sulfide concentrations are expected to occur. The monitoring sites will provide data that can be used to assess population exposures in case of odor events and for comparison to the state standard for hydrogen sulfide. During 2015 the Saul Martinez Elementary School site will transition to become part of the permanent ambient air monitoring network.

As the Salton Sea is projected to recede, these sites will be further enhanced for monitoring the predicted particulate matter (PM) emissions from the Salton Sea area that may influence the South Coast Air Basin PM levels.

AllenCo

AllenCo is an oil field and gas production facility located in the City of Los Angeles surrounded by residences including low income housing units, F.D. Lanterman high school, and Mount Saint Mary's College. For several years SCAQMD inspectors have responded to numerous odor complaints from the local community and suspects AllenCo to be the source of these odors. In October 2013 the SCAQMD initiated monitoring at sites around the AllenCo facility. At Mt. St Mary's College regularly scheduled VOC samples are collected, and continuous Non-Methane Hydrocarbon measurements are also being collected. On the roof of the low income housing building across the street from AllenCo, there is a remote controlled sampler capable of collecting a VOC grab sample should an odor complaint be called into the SCAQMD odor complaint line. In November 2013 AllenCo temporarily shut down operations to repair issues which it believes were the cause of the previous odor complaints. SCAQMD continues to monitor continuous Non-Methane Hydrocarbon Measurements as well as VOC samples.

Duarte

To better assess expansion of rock and quarry operations and its impact on residents of Duarte, SCAQMD began continuous PM10 monitoring on May 21, 2013. The study assesses levels of PM10 in the City of Duarte. SCAQMD is in the process of discussing with the city of Azusa for potential monitoring.

CPV Sentinel

To better assess potential emission impacts from the CPV Sentinel power plant to the Desert Hot Springs area, SCAQMD has installed and is now operating an air pollution monitor

directly downwind of the power plant at a Mission Springs Water District well site. Monitoring began on May 23, 2014 and measures levels of fine particulates (PM_{2.5}) on a continuous basis, providing real-time hourly data (<http://www.aqmd.gov/home/library/air-quality-data-studies/special-monitoring/cpv-sentinel-monitoring>).

Carlton Forge

Carlton Forge Works (CFW) operates furnaces, presses and grinders at its facility in Paramount to manufacture large metal rings used by aerospace and other industries. As part of its on-going investigation of air quality complaints and community concerns about potential burnt metal odors and emission from CFW, SCAQMD has deployed TSP monitors to monitor for metals. Based on the results of air sampling to date, SCAQMD has found ambient levels of some metals measured on few days in August, September and October 2013 at concentrations significantly higher than average levels measured throughout the basin. However, more recent measured ambient concentrations have declined.

Recent or Proposed Modifications to Network

Near Roadway NO₂ Monitoring

On February 9, 2010, U.S. EPA promulgated new minimum monitoring requirements for the NO₂ monitoring network in support of newly revised 1-hour NO₂ NAAQS and the retained annual NAAQS. In the new monitoring requirements, State and Local air monitoring agencies are required to install near-road NO₂ monitoring stations at locations where peak hourly NO₂ concentrations are expected to occur within the near-road environment in larger urban areas. On March 7, 2013 EPA revised the new monitoring requirements from the 2010 NO₂ NAAQS revision, delaying implementation of the first phase of the near road network to January 1, 2014 and the second phase to January 1, 2015. As part of the implementation, State and local air agencies were required to consider traffic volumes, fleet mix, roadway design, traffic congestion patterns, local terrain or topography, and meteorology in determining where a required near-road NO₂ monitor should be placed. In addition to those required considerations, there are other factors that impact the selection and implementation of a near-road monitoring station including satisfying siting criteria, site logistics (e.g., gaining access to property and safety), and population exposure.

The primary objective of the near-road NO₂ network is to place monitoring resources on near-road locations where peak, ambient NO₂ concentrations are expected to occur as a result of on-road mobile source emissions. Monitoring at such a location or locations within a particular urban area will provide data that can be used for comparison to the NAAQS and to assess population exposures for those who live, work, play, go to school, or commute within the near-roadway environment. Population density for SCAQMD is shown in Figure A. The near-road NO₂ data will provide a clear means to determine whether or not the NAAQS is being met within the near-road environment throughout a particular urban area. Since near-road NO₂ monitoring sites are to be placed at locations with expected peak NO₂ concentrations, the target mobile sources and the roads they travel upon are ubiquitous throughout urban areas, these monitoring data may be said to represent the relative worst case population exposures that may be occurring in the near-road environment throughout an urban area over the averaging times of interest.

Minimum monitoring requirements are specified in 40 CFR 58 Appendix D. EPA requires state and local air agencies to operate one near-road NO₂ monitor in each Core Based Statistical Area (CBSA) with a population of 500,000 or more persons. Further, those CBSAs with 2,500,000 or more persons, or those CBSAs with one or more roadway segments carrying traffic volumes of 250,000 or more vehicles (as measured by annual average daily traffic [AADT] counts), shall have two near-road NO₂ monitors. The process of identifying minimum monitoring requirements is shown in Figure B.

The near roadway grant guidance directed implementation of near road sites be conducted in phases. The first of the Phase I sites became operational on January 1, 2014 in Anaheim adjacent to the 5 freeway (FE AADT #3, 2013). The Second Phase I site is located in Ontario adjacent to Interstate 10/Interstate 15 (FE AADT #11, 2013) and began collecting data July, 2014. Phase II sites began collecting data on January 1, 2015. Sites are located along Route 710 in Long Beach (FE AADT 22, 2014) and along Route 60 in Ontario (FE AADT #9, 2014).

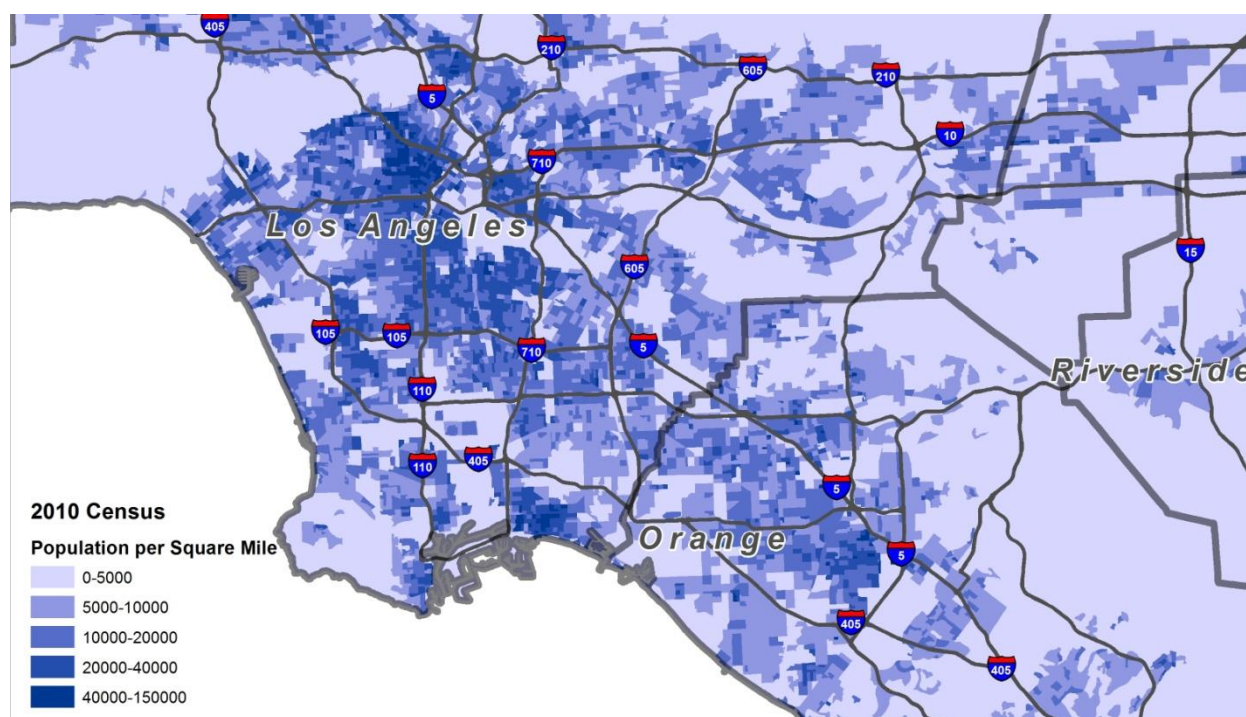


Figure A – SCAQMD Population Density

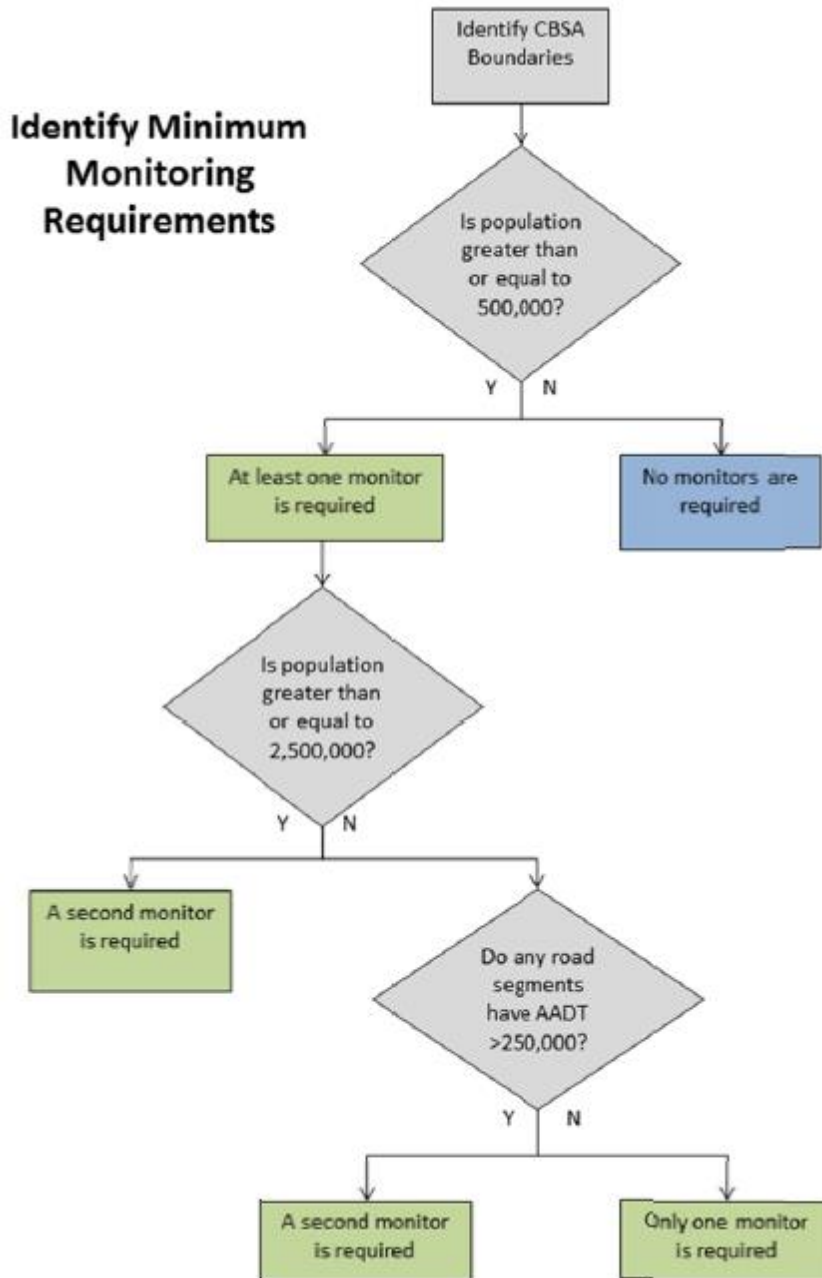


Figure B - Monitoring Requirements

The SCAQMD jurisdictional boundary encompasses two MSAs and two CBSAs whose boundaries and codes mirror those of the MSAs as defined by the U.S. Office of Management and Budget. The Los Angeles-Long Beach-Anaheim MSA\CBSA (Code 31080) has an estimated population of 13,131,431 and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) has an estimated population of 4,380,878 according to the most recent U.S. Census estimates available for 2013. The minimum number of monitors required for near road monitoring is based on MSA\CBSA population and shown in Table 8.

TABLE 8. Minimum Number of Monitors Required Near Road NO2

CBSA	Population Estimate (2013)	Highest AADT Segment (2013)	Minimum Required Near Road NO2 Sites 2014	Minimum Required Near Road NO2 Sites 2015
31080	13,131,431	377,000	1	1
40140	4,380,878	267,000	1	1

The monitoring site selection process was in accordance with guidance published in the U.S. EPA Near Roadway NO2 Technical Assistance Document (TAD) (June, 2012). The process for ranking candidate road segments is outlined in Figure C.

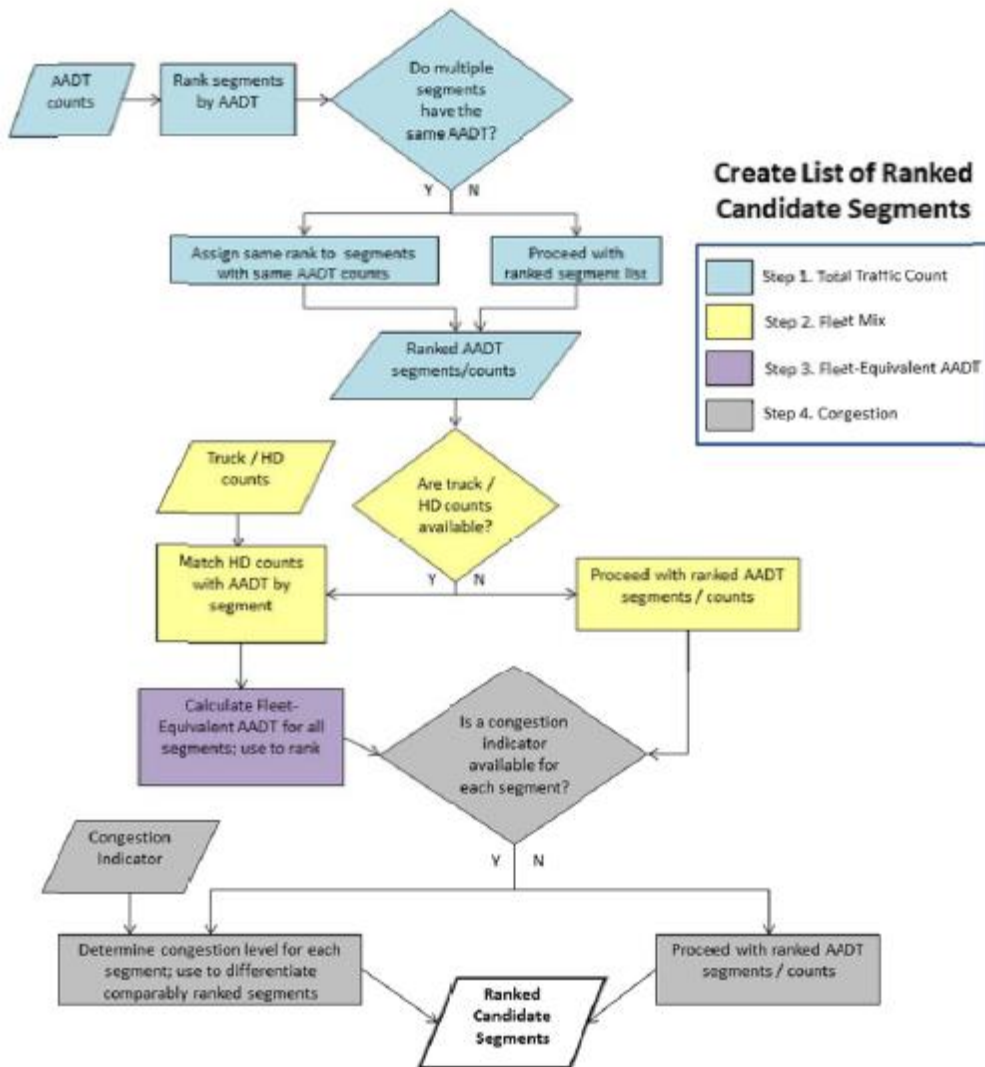


Figure C – Ranking Candidate Road Segments

The candidate road segment ranking process incorporated the following EPA TAD considerations:

FE AADT – A single metric to compare road segments, accounting for AADT and fleet mix (Heavy Duty Vehicles). The Fleet-Equivalent AADT value for each road segment is calculated by the following formula:

$$(FE) AADT = (AADT - HDc) + (HDm * HDc)$$

Where AADT is the total traffic volume count for a particular road segment, HDc is the total number of heavy-duty vehicles for a particular road segment, and HDm is a multiplier that represents the heavy-duty to light-duty NOx emission ratio for a particular road segment. An HDm of 17 was used instead of the default national average of 10 based on emissions inventories within the SCAQMD jurisdiction (Air Quality Management Plan, South Coast Air Quality Management District, 2012). During 2013, and again in 2014, the top 50 FE AADT segment candidates were calculated based on the latest (2012) California Department of Transportation AADT counts at the time a decision was made on site location (<http://traffic-counts.dot.ca.gov/>). Traffic counts are shown in Table 9.

TABLE 9. Top Fifty FE AADT Candidate Roadway Segments

FE AADT Rank	HD Rank	AADT Rank	FE AADT	AADT Total (2012)	Total Trucks (HD)	Total Truck %	County	Post mile	Route	Description
1	15	4	754464	348000	25404	7.3	LA	23.56	60	DIAMOND BAR, JCT. RTE. 57
2	1	59	705536	260000	27846	10.71	LA	9.612	605	SANTA FE SPRINGS, JCT. 5
3	2	66	691976	255000	27311	10.71	LA	13.569	605	WHITTIER, JCT. RTE. 72
4	41	3	680560	362000	19910	5.5	ORA	34	5	SANTA ANA, JCT. RTE. 22 & 57
5	5	72	678400	250000	26775	10.71	LA	17.407	605	INDUSTRY, JCT. RTE. 60
6	14	45	674576	266000	25536	9.6	ORA	38.915	5	LINCOLN AVENUE
7	24	20	669968	292000	23623	8.09	LA	7.653	605	NORWALK, JCT. RTE. 105
8	16	50	669504	264000	25344	9.6	ORA	36.258	5	KATELLA AVENUE
9	3	117	656768	222000	27173	12.24	SBD	4.58	60	ONTARIO, JCT. RTE. 83
10	4	118	653800	221000	27050	12.24	SBD	2.366	60	CENTRAL AVENUE
11	17	78	646804	245300	25094	10.23	SBD	9.936	10	ONTARIO, JCT. RTE. 15
12	18	79	646804	245300	25094	10.23	SBD	11.132	10	ETIWANDA AVENUE
13	22	67	638048	254000	24003	9.45	LA	11.711	60	INDUSTRY, JCT. RTE. 605
14	8	120	636424	217000	26214	12.08	SBD	0	60	LOS ANGELES/SAN BERNARINO COUNTY LINE
15	23	64	635304	257000	23644	9.2	ORA	5.258	91	ANAHEIM, STATE COLLEGE BLVD
16	10	121	633488	216000	26093	12.08	LA	29.392	60	POMONA, JCT. RTE. 71,
17	28	31	627616	278000	21851	7.86	LA	44.014	5	LOS ANGELES, JCT. RTE. 210
18	11	125	625736	215000	25671	11.94	SBD	5.855	60	GROVE AVENUE
19	19	109	623760	226000	24860	11	SBD	24.24	10	COLTON, JCT. RTE. 215
20	20	105	621920	230000	24495	10.65	LA	20.428	60	ROWLAND HEIGHTS,
21	52	5	620400	330000	18150	5.5	ORA	30.263	5	TUSTIN, JCT. RTE. 55,
22	6	165	619008	192000	26688	13.9	LA	12.97	710	LONG BEACH, JCT. RTE. 91
23	34	27	613312	280000	20832	7.44	LA	36.358	5	LOS ANGELES, JCT. RTE. 170
24	25	85	608520	243800	22795	9.35	ORA	42.1	5	FULLERTON, JCT. RTE. 91
25	31	51	605296	264000	21331	8.08	ORA	2.615	91	BUENA PARK, JCT. RTE. 39 BEACH BLVD

TABLE 9 (continued). Top Fifty FE AADT Candidate Roadway Segments

FE AADT Rank	HD Rank	AADT Rank	FE AADT	AADT Total (2012)	Total Trucks (HD)	Total Truck %	County	Post mile	Route	Description
26	13	161	603728	194000	25608	13.2	SBD	27.296	10	MOUNTAIN VIEW AVENUE
27	9	175	602640	184000	26165	14.22	LA	10.823	710	LONG BEACH, DEL AMO
28	36	40	599456	268000	20716	7.73	LA	13.094	91	LONG BEACH, CHERRY
29	35	43	598936	267000	20746	7.77	LA	39.361	5	LOS ANGELES, JCT. RTE. 118
30	61	8	591552	316000	17222	5.45	LA	17.17	101	LOS ANGELES, JCT. RTE. 405
31	38	52	590512	264000	20407	7.73	LA	11.681	91	LONG BEACH, JCT. RTE. 710
32	12	179	588112	178000	25632	14.4	LA	9.41	710	LONG BEACH, JCT. RTE. 405
33	40	55	586048	262000	20253	7.73	LA	14.618	91	BELLFLOWER, JCT. RTE. 19
34	47	38	583128	273000	19383	7.1	ORA	3.258	91	FULLERTON, HARBOR
35	27	112	577376	224000	22086	9.86	LA	25.464	60	DIAMOND BAR, JCT. RTE. 57 NORTH
36	44	60	573248	260000	19578	7.53	LA	9.87	110	LOS ANGELES, JCT. RTE. 91
37	65	22	560512	290000	16907	5.83	LA	5.046	605	CERRITOS, JCT. RTE. 91
38	51	54	560088	263000	18568	7.06	LA	36.41	210	DUARTE, JCT. RTE. 605,
39	74	16	559736	299000	16296	5.45	LA	19.99	101	ENCINO AVENUE
40	107	1	558700	377500	11325	3	ORA	20.751	405	JCT. RTE. 22 EAST,
41	29	139	555744	210000	21609	10.29	SBD	13.169	10	FONTANA, CHERRY AVENUE
42	96	7	552120	321000	14445	4.5	ORA	9.187	91	JCT. RTE. 55 SOUTH
43	63	32	551104	278000	17069	6.14	ORA	15.6	57	ANAHEIM, JCT. RTE. 91,
44	32	128	549552	214000	20972	9.8	LA	20.189	605	BALDWIN PARK, JCT. 10
45	108	2	547600	370000	11100	3	ORA	24.044	405	SEAL BEACH, JCT. RTE. 605
46	90	14	545400	303000	15150	5	ORA	11.54	91	PERALTA, JCT. RTE. 90
47	67	36	544728	275000	16858	6.13	LA	41.597	5	LOS ANGELES, JCT. RTE. 405
48	21	200	544360	155000	24335	15.7	RIV	0.491	60	JCT. RTE. 15
49	26	174	541076	185300	22236	12	SBD	29.313	10	ALABAMA STREET OC
50	43	111	539288	225000	19643	8.73	LA	15.692	710	LYNWOOD, JCT. RTE. 105

The process of ranking the roadway segments began with creating a scoring matrix incorporating EPA TAD considerations. The scoring matrix was used as a tool to determine the most suitable location for monitoring by incorporating traffic data and quantifying station siting considerations. FE AADT was weighted a factor of five due to the major role traffic influences near roadway monitoring. Other important factors such as roadway design, distance from roadway, meteorology, roadside structures and terrain were taken into consideration and weighted a factor of one each and are defined as follows:

Roadway Design – Considers monitor placement and can affect pollutant transport and dispersion. The most desirable attributes include a monitoring location at grade with the surrounding terrain and roadway. The least desirable attributes include deep cut-sections significantly below grade or significantly above grade.

Distance from Roadway - Per 40 CFR Part 58 Appendix E: the site should be “As near as practicable to the outside nearest edge of the traffic lanes of the target road segment; but shall not be located at a distance greater than 50 meters, in the horizontal, from the outside nearest edge of the traffic lanes of the target road segment.” The TAD recommends the target distance for near-road NO₂ monitor probes be within 20 meters of the target road whenever possible.

Meteorology– Can affect pollution transport and dispersion. The most desirable location is relative downwind locations – winds from road to monitor. The least desirable locations are sites upwind of the target road.

Roadside Structures – Considers monitor placement and can affect pollutant transport and dispersion. The most desirable monitoring location will have no barriers present other than low (< 2m in height) safety barriers or guard rails. The least desirable attributes include the presence of sound walls, mature vegetation (high and thick) or obstructive buildings.

Terrain – Can affect pollutant dispersion and local atmospheric stability. The most desirable terrain is flat or gentle terrain, within a valley, or along road grade. The least desirable terrain is along mountain ridges or peaks, hillsides, or other naturally windswept areas.

A scale normalized to 5 was used to rank each candidate segment; the scoring matrix is shown as Table 10.

TABLE 10. Candidate Segment Scoring Matrix

Score	5	3	1	0
FE AADT (Weighted 5x)	Traffic count of the highest ranked FE AADT	Normalized to the highest ranked FE AADT	Normalized to the highest ranked FE AADT	N/A
Roadway Design	At same elevation	Slightly higher elevation	Below grade / Under overpass / On bridge	Design prevents access or accurate representation of roadway.
Distance from Roadway	Less than or equal to 20 m	Normalized distance from 20 m to 50 m	50 m from roadway	>50 m
Meteorology (predominant wind direction)	Downwind	Parallel	Upwind	N/A
Roadside Structures	No barriers (< 2 m)	Some obstruction (small sound barriers sparse low vegetation)	Major obstruction (large sound walls, buildings).	Completely blocked
Terrain	Flat / mildly sloping	Uneven	Mountain ridges, Canyons	Terrain prevents access or accurate representation of roadway
				Weighting Values
				FE AADT
				Roadway Design
				Distance from Roadway
				Meteorology
				Roadside Structures
				Terrain

The top FE AADT sites were surveyed and ranked according to the scoring matrix. Some sites had several locations within the road segment to consider and each location was scored individually as a sub-site. The results are shown for the Los Angeles-Long Beach-Anaheim MSA\CBSA (Code 31080) and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) in Tables 11 and 12.

TABLE 11. Los Angeles-Long Beach-Santa Ana MSA\CBSA

Location	Route 57/60 Diamond Bar			Route 5/605 Santa Fe Springs		Route 605/72 Whittier		Route 5/22/57 Orange		Route 605/60 City of Industry				Route 5/Lincoln Anaheim		Route 605/105 Norwalk		Route 5/Katella Anaheim			Route 60/605 City of Industry				State College Blvd./Route 91 Anaheim		Route 710/91 Long Beach	
FE AADT Rank	1			2		3		4		5				6		7		8			13				15		22	
FE AADT	754,464			705,536		691,976		680,560		678,400				674,576		669,968		669,504			638,048				635,304		619,008	
HD Rank	15			1		2		41		5				14		24		16			22				23		6	
HD	25,404			27,846		27,311		19,910		26,775				25,536		23,623		25,344			24,003				23,644		26,668	
AADT Rank	4			59		66		3		72				45		20		50			67				64		165	
AADT	348,000			260,000		255,000		362,000		250,000				266,000		292,000		264,000			254,000				257,000		192,000	
Site	1A	1B	1C	2A	2B	3A	3B	4A	4B	5A	5B	5C	5D	6A	6B	7A	7B	8A	8B	8C	13A	13B	13C	13D	15A		22A	
FE AADT Score	5.00	5.00	5.00	4.68	4.68	4.59	4.59	4.51	4.51	4.50	4.50	4.50	4.50	4.47	4.47	4.44	4.44	4.44	4.44	4.44	4.23	4.23	4.23	4.23	4.21		4.10	
Roadway Design	4.5	4.0	5.0	4.5	4.5	3.0	5.0	4.0	5.0	5.0	2.0	2.0	4.0	4.0	5.0	1.0	2.0	3.0	3.0	1.0	5.0	2.0	2.0	4.0	1.0		5.0	
Distance from Roadway	5.0	5.0	5.0	5.0	2.5	4.0	4.0	1.2	3.6	4.0	3.6	2.6	3.3	3.7	5.0	2.2	0.0	0.0	3.2	2.5	4.0	3.6	2.6	3.3	3.2		5.0	
Meteorology	5.0	5.0	1.0	1.0	1.0	3.0	3.5	1.0	3.5	1.0	2.5	5.0	3.0	5.0	5.0	3.0	4.0	4.0	4.0	4.0	1.0	2.5	5.0	3.0	4.0		5.0	
Roadside Structures	4.0	4.0	1.0	3.0	5.0	3.0	4.0	4.0	4.0	4.0	1.0	1.0	1.0	5.0	5.0	1.0	1.0	2.5	2.5	2.5	4.0	1.0	1.0	1.0	1.0		5.0	
Terrain	3.5	4.0	4.0	4.0	3.0	2.0	5.0	4.0	5.0	5.0	2.0	2.0	3.5	3.0	5.0	4.0	4.0	3.0	3.0	3.0	5.0	2.0	2.0	3.5	3.0		5.0	
Sum (Out of 50)	4.70	4.70	4.10	4.09	3.94	3.79	4.44	3.68	4.36	4.15	3.36	3.51	3.73	4.31	4.74	3.34	3.32	3.47	3.79	3.52	4.01	3.22	3.38	3.60	3.32		4.55	
Overall Ranking	2	2	8	9	11	12	4	14	5	7	20	17	13	6	1	21	22	18	12	16	10	23	19	15	22		3	

TABLE 12. Riverside-San Bernardino-Ontario MSA\CBSA

Location	Route 60/83 Ontario	Route 60/Central Chino			Route 10/15 Ontario		Route 10/Etiwanda Ontario	Route 60 LA/SB County Line Chino	Route 60/71 Pomona	Grove Ave/Route 60 Ontario
FE AADT Rank	9	10			11		12	14	16	18
FE AADT	656,768	653,800			646,804		646,804	636,424	633,488	625,736
HD Rank	3	4			17		18	8	10	11
HD	27,173	27,050			25,094		25,094	26,214	26,093	25,671
AADT Rank	117	118			78		79	120	121	125
AADT	222,000	221,000			245,300		245,300	217,000	216,000	215,000
Site	9A	10A	10B	10C	11A	11B	12A	14A	16A	18A
FE AADT Score	4.35	4.33	4.33	4.33	4.29	4.29	4.29	4.22	4.20	4.15
Roadway Design	3.0	2.0	2.0	2.0	4.0	3.0	5.0	1.0	1.0	3.0
Distance from Roadway	2.0	3.3	3.3	4.0	0.0	1.7	5.0	2.6	4.0	4.5
Meteorology	3.5	2.5	2.5	3.0	3.0	4.0	5.0	3.0	3.0	4.0
Roadside Structures	2.5	3.0	4.0	3.0	5.0	1.0	5.0	3.0	1.0	4.0
Terrain	3.5	2.0	4.0	4.0	4.0	2.0	5.0	3.0	3.0	4.0
Sum (Out of 50)	3.63	3.45	3.75	3.77	3.74	3.31	4.64	3.37	3.30	4.03
Ranking	6	7	4	3	5	9	1	8	10	2

Level of Service (congestion) data is considered to differentiate between two comparatively ranked segments as part of the site selection process. Tables 13, 14 and 15 show the latest congestion data available for the Los Angeles, Orange, and the Riverside-San Bernardino-Ontario MSA\CBSA used when site locations were decided. Data is shown in the following table as reported by the California Department of Transportation and can be found at (<http://www.dot.ca.gov/hq/traffops/sysmgtpl/MPR/index.htm>).

TABLE 13. Top Congested Freeways Los Angeles County

Route	County	Vehicle Hours of Delay at 60 mph		Difference (2012 - 2011)		Rank	
		2011	2012	Absolute	Percent	2011	2012
I-5	Los Angeles	14,860,558	15,720,370	859,812	6%	1	1
I-405	Los Angeles	11,519,515	12,627,567	1,108,053	10%	2	2
SR-101	Los Angeles	9,918,324	10,567,013	648,689	7%	3	3
SR-60	Los Angeles	9,428,050	10,102,098	674,047	7%	4	4
I-10	Los Angeles	7,082,866	8,258,162	1,175,296	17%	5	5
I-210	Los Angeles	6,962,310	7,933,128	970,818	14%	6	6
I-110	Los Angeles	5,478,239	5,935,385	457,146	8%	7	7
I-605	Los Angeles	4,156,413	4,476,068	319,655	8%	8	8
I-105	Los Angeles	3,796,836	3,413,272	-383,564	-10%	9	9
SR-91	Los Angeles	3,154,442	3,385,568	231,126	7%	10	10
TOTALS		76,357,552	82,418,630	6,061,078	7.9%		

TABLE 14. Top Congested Freeways Orange County

Route	County	Vehicle Hours of Delay at 60 mph		Difference (2012 - 2011)		Rank	
		2011	2012	Absolute	Percent	2011	2012
I-5	Orange	7,728,734	8,098,821	370,087	5%	1	1
I-405	Orange	5,436,501	6,246,872	810,371	15%	2	2
SR-91	Orange	3,657,120	3,235,483	-421,637	-12%	3	3
SR-57	Orange	2,165,512	3,162,837	997,325	46%	5	4
SR-55	Orange	2,356,787	2,735,502	378,715	16%	4	5
SR-22	Orange	1,069,336	1,089,160	19,825	2%	6	6
SR-74	Orange	0	570,927	570,927			7
SR-73	Orange	358,253	410,764	52,511	15%	7	8
SR-241	Orange	202,343	259,877	57,533	28%	8	9
I-605	Orange	174,457	198,783	24,325	14%	9	10
TOTALS		23,149,042	26,009,023	2,859,981	12.4%		

TABLE 15. Top Congested Freeways Riverside & San Bernardino Counties

Route	County	Vehicle Hours of Delay at 60 mph		Difference (2012 - 2011)		Rank	
		2011	2012	Absolute	Percent	2011	2012
SR-91	Riverside	3,595,668	3,967,746	372,078	10%	1	1
I-10	San Bernardino	2,426,202	2,107,459	-318,744	-13%	2	2
I-215	Riverside	2,025,724	1,870,771	-154,953	-8%	3	3
I-15	Riverside	1,602,800	1,633,739	30,938	2%	4	4
SR-60	San Bernardino	1,297,909	1,554,445	256,536	20%	5	5
I-15	San Bernardino	1,119,114	1,319,966	200,852	18%	6	6
SR-60	Riverside	888,458	861,892	-26,565	-3%	7	7
I-215	San Bernardino	376,842	582,028	205,186	54%	9	8
I-210	San Bernardino	563,406	503,600	-59,806	-11%	8	9
I-10	Riverside	113,341	155,993	42,652	38%	11	10
TOTALS		14,009,462	14,557,637	548,175	4%		

Sites were selected based on their ranking in the scoring matrix. A review of the latest data available (2013) shows variation in AADT traffic counts however site selections remain consistent when ancillary considerations are taken into account. Other considerations involved in the site selection process as directed in the Near Road Technical Assistance Document include:

Safety - Near-road monitoring sites must be accessible to station operators in a safe and legal manner, and not pose safety hazards to drivers, pedestrians, or nearby residents. Safety hazards to monitoring site operators include factors which inhibit the safe entrance to or egress from a site and factors that could allow vehicles to encroach upon and damage the site infrastructure.

Accessibility – ability to access the desired location from the property owner or ability to obtain a right of way permit.

Infrastructure – availability of power and data connection at the site.

On December 14, 2012, U.S. EPA strengthened the NAAQS for PM_{2.5} and as part of the revisions, a requirement was added to monitor near heavily trafficked roads in large urban areas. Particle pollution may be higher along these roads as a result of emissions from cars and heavy-duty diesel trucks and buses. The U.S. EPA requirement is for one near-roadway PM_{2.5} monitor to measure in each CBSA with a population of 1 million or more. The monitors were to be phased in for the largest CBSAs (population of 2.5 million or more) by January 1, 2015. SCAQMD has timely installed two monitors, whose locations were selected based upon the existing near roadway NO₂ site per CBSA that was ranked higher for heavy duty diesel traffic. Thus, the 710 freeway site in Long Beach was selected for the Los Angeles-Long Beach-Anaheim CBSA, and the Route 60 site in Ontario was selected for the Riverside-San Bernardino-Ontario CBSA.

During June, 2014 an Annual Network Plan Workshop was conducted at SCAQMD's Diamond Bar office to solicit input from stakeholders. SCAQMD staff presented and held a discussion on

SCAQMD's selection of near road sites. Written comments were received in 2013 by the National Defense Resources Council (NRDC) regarding support for placing a site along the 710 freeway for a Los Angeles-Long Beach-Anaheim CBSA near road monitoring location.

Crestline

SCAQMD has been operating the Crestline site since 1973. The deteriorating state of the shelter along with compromises made to the siting criteria due to obstructions has made it a candidate for site improvement. As part of regular air monitoring station maintenance, a new station shelter has been outfitted to replace the existing trailer. SCAQMD is working with San Bernardino County Planning, Building and Safety departments to receive approval for construction plans. Construction is anticipated during fall 2015; however the schedule is dependent upon the approval and contract process.

West LA

SCAQMD has been operating the West LA site since 1983. The deteriorating state of the shelter along with compromises made to the siting criteria due to obstructions has made it a candidate for site improvement. As part of regular air monitoring station maintenance, a new station shelter has been outfitted to replace the existing platform. However, due to recent legislation, the SCAQMD lease is under review by the Veterans Administration. Construction schedule is dependent upon pending lease review.

Riverside Magnolia

SCAQMD has been operating the Riverside Magnolia site since October, 1972. The deteriorating state of the building along with compromises made to the siting criteria due to obstructions, and safety issues, made it necessary to close the site during March, 2015. SCAQMD in consultation with EPA Region IX is assessing the relocation of the site in the 5 year network assessment.

Burbank

SCAQMD has been operating the Burbank site since October, 1961. Due to the termination of the lease by owner, the site was shut down June, 2014. SCAQMD is working with Los Angeles County to find a suitable location for monitoring within 2.5 miles of the previous location. SCAQMD is in consultation with EPA Region IX and is assessing the relocation of the site in the 5 year network assessment.

Ontario Fire Station

SCAQMD has been operating the Ontario site since January, 1999. Due to the termination of lease by the owner, the site was shut down June, 2014. SCAQMD is working to find a suitable location for monitoring or consolidation with nearby sites. SCAQMD is in consultation with EPA Region IX and is assessing the relocation of the site in the 5 year network assessment.

South Long Beach

SCAQMD has been operating the South Long Beach station as part of the ambient air-monitoring network. Recent construction of the buildings adjacent to the site potentially compromises the siting criteria. During the FY 2015-16 a data comparison between a more centralized monitoring location in Long Beach will be undertaken. If comparison of data between the two locations

demonstrates some comparability, or if the metropolitan site shows consistently higher levels of PM, the South Long Beach site may be relocated in consultation with EPA Region IX.

Long Beach (North)

At the request of the owner, the Long Beach (North) site lease was terminated on September 30, 2013. As a result some pollutants were discontinued while a replacement site is sought. Consideration is being given to consolidation with nearby sites to better represent the Long Beach area and will be addressed in the 5 year network assessment.

Minimum Monitoring Requirements

The SCAQMD jurisdictional boundary encompasses two MSAs and two CBSAs whose boundaries and codes mirror those of the MSAs as defined by the U.S. Office of Management and Budget. Los Angeles-Long Beach-Anaheim MSA\CBSA (Code 31080) has an estimated population of 13,131,431 and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) has an estimated population of 4,380,878 according to U.S. Census estimates for 2013. The minimum number of monitors for each pollutant is based on MSA population as described in 40 CFR § 58 Appendix D. The SCAQMD is a Primary Quality Assurance Organization (PQAO) and the network exceeds the minimum monitoring requirements for all criteria pollutants. Details are provided below.

Table 16 Minimum Monitoring Requirements for Ozone.

(Note: Refer to section 4.1 and Table D-2 of Appendix D of 40 CFR Part 58.)

MSA	Counties	Population and Census Year	8-hr Design Value (ppb) DV, Years ¹	Design Value Site (name AQS ID)	Monitors Required	Monitors Active	Monitors Needed
30180	Los Angeles Orange	13,131,431 2013	97 2012-2014	Santa Clarita 060376012	4	16	0
40140	San Bernardino Riverside	4,380,878 2013	102 2012-2014	Redlands 060714003	3	13	0

¹DV Years – The three years over which the design value was calculated.

Monitors required for SIP or Maintenance Plan: 29

Table 17a Minimum Monitoring Requirements for PM_{2.5} SLAMS (FRM/FEM/ARM)

(Note: Refer to sections 4.71, 4.72, and Table D-5 of Appendix D of 40 CFR Part 58.)

MSA	Counties	Population and Census Year	Annual Design Value [ug/m ³], DV & Years ¹	Annual Design Value Site (Name, AQS ID)	Daily Design Value [ug/m ³], DV & years	Daily Design Value site (name AQS ID)	# Required SLAMS Monitors	# Active SLAMS Monitors	# Additional SLAMS needed
30180	Los Angeles Orange	13,131,431 2013	12.4 2012-2014	Los Angeles 060371103	32 2012-2014	Los Angeles 060371103	3	10	0
40140	San Bernardino Riverside	4,380,878 2013	14.7 2012-2014	Mira Loma 060658005	38 2012-2014	Mira Loma 060658005	3	9	0

¹DV Years – The three years over which the design value was calculated.

Monitors required for SIP or Maintenance Plan: 19

Table 17b Minimum Monitoring Requirements for Continuous PM_{2.5} Monitors (FEM and Non-FEM)*

(FEM/ARM and non-FEM see 40 CFR 58 Appendix D Section 4.72.)

MSA	Counties	Population and Census Year	Annual Design Value [ug/m ³], DV & Years ¹	Annual Design Value Site (Name, AQS ID)	Daily Design Value [ug/m ³], DV & years	Daily Design Value site (name AQS ID)	# Required Continuous Monitors	# Active Continuous Monitors	# Additional Continuous needed
30180	Los Angeles Orange	13,131,431 2013	19.58 2012-2014	Los Angeles 060371103	41.7, 2012-2014	Los Angeles 060371103	2	4-FEM 3-Non FEM	0
40140	San Bernardino Riverside	4,380,878 2013	19.37, 2012-2014	Mira Loma 060658005	52.6, 2012-2014	Rubidoux 060658001	2	3-FEM 6-Non FEM ²	0

¹DV Years – The three years over which the design value was calculated.

Monitors required for SIP or Maintenance Plan: 15

²One Non FEM is collocated at the Rubidoux site with a FEM.

* Currently all active continuous monitors do not meet acceptance criteria under 78 FR 3086 and is requested to not be compared to the NAAQS.

Table 17c Minimum Monitoring Requirements for Speciated PM_{2.5} Monitors

(Note: Refer to sections 4.74 of Appendix D of 40 CFR Part 58.)

MSA	Counties	Population and Census Year	Monitors Required ¹	Monitors Active	Monitors Needed
30180	Los Angeles Orange	13,131,431 2013	1	2	0
40140	San Bernardino Riverside	4,380,878 2013	1	2	0

¹Sites designated as part of the PM_{2.5} Speciation Trends Network (STN).

Monitors required for SIP or Maintenance Plan: 4

Table 18 Minimum Monitoring Requirements for PM10

(Note: Refer to section 4.6 and Table D-4 of Appendix D of 40 CFR Part 58.)

MSA	Counties	Population and Census Year	2014 Max Concentration [ug/m3]	Max Concentration site (name AQS ID)	# Required Monitors	# Active Monitors	# Additional Monitors Needed
30180	Los Angeles Orange	13,131,431 2013	98	Azusa 060370002	2-4 Low Conc	8	0
40140	San Bernardino Riverside	4,380,878 2013	136 ¹	San Bernardino 060719004	4-8 Med Conc	11	0

Monitors required for SIP or Maintenance Plan: 19

¹Excluding high concentration at Indio (298 ug/m3, on 8/18/2014.)

Table 19 Minimum Monitoring Requirements for NO2

(Note: Refer to section 4.3 of Appendix D of 40 CFR Part 58.)

CBSA	Population and Census Year	Max AADT Counts (2013) ¹	# Required Near Road Monitors ²	#Active Near Road Monitors	#Additional Near Road Monitors Needed	#Required Area Wide Monitors	#Active Area Wide Monitors	#Additional Area wide Monitors Needed
30180	13,131,431 2013	377,000 2013	2	2	0	1	15	0
40140	4,380,878 2013	267,000 2013	2	2	0	1	8	0

¹Max AADT Counts – 2013 is the latest data available from CA DOT

²Four required beginning January 1, 2015.

Monitors required for SIP or Maintenance Plan: 13 (area wide), 4 (near road)

Monitors Required for PAMS: 7

EPA Regional Administrator-required monitors per 40 CFR 58, Appendix D 4.3.4: 3

Table 20 Minimum Monitoring Requirements for SO₂

(Note: Refer to section 4.4 of Appendix D of 40 CFR Part 58.)

CBSA	Counties	Total SO ₂ ¹ [tons/year]	Population Weighted Emissions Index ² [million persons-tons per year]	#Active Near Road Monitors	#Required Area Wide Monitors	#Active Area Wide Monitors	#Additional Area wide Monitors Needed
30180	Los Angeles Orange	6102.45 2013	80,134	0	1	4	0
40140	San Bernardino Riverside	2307.02 2013	10,107	0	1	2	0

¹Using latest NEI data 2013, available on EPA website: <http://www.epa.gov/ttn/chief/net/2013inventory.html>

²Calculated by multiplying CBSA population and total SO₂ and dividing product by one million.

Monitors required for SIP or Maintenance Plan: 6

EPA Regional Administrator-required monitors per 40 CFR 58, Appendix D 4.4.3: 0

Table 21 Minimum Monitoring Requirements for CO

(Note: Refer to section 4.2 of Appendix D of 40 CFR Part 58.)

CBSA	Population and Census Year	#Required Near Road Monitors ¹	#Active Near Road Monitors ²	#Required Area Wide Monitors	#Active Area Wide Monitors
30180	13,131,431 2013	1	1	0	16
40140	4,380,878 2013	1	1	0	7

¹Required beginning January 1, 2015

²Required sites to be active by January 1, 2015; to be collocated with near road NO₂ sites.

Monitors required for SIP or Maintenance Plan: 23 (area wide), 2 (near road)

EPA Regional Administrator-required monitors per 40 CFR 58, Appendix D 4.4.2: 0

Table 22a Minimum Monitoring Requirements for Pb at NCore

(Note: Refer to section 4.5 of Appendix D of 40 CFR Part 58.)

NCore Site (name, AQS ID)	CBSA	Population and Census Year	# Required Monitors	# Active Monitors	# Additional Monitors Needed
Los Angeles (Main Street) 060371103	30180	13,131,431 2013	1	1	0
Rubidoux 060658001	40140	4,380,878 2013	1	1	0

Table 22b Source Oriented Pb Monitoring (Including Airports)

(Note: Refer to section 4.5 of Appendix D of 40 CFR Part 58.)

Source Name	Address	Pb Emissions ¹ (tons per year)	Emission Inventory Source ² and Data Year	Max 3-Month Design Value ¹ [ug/m3]	Design Value Date(third month, year)	# Required Monitors	# Active Monitors	# Additional Monitors Needed
Long Beach Airport Daugherty Field	4100 E Donald Douglas Dr, Long Beach, CA 90808	0.8	NEI 2011	Unavailable	Unavailable	Pending 5 year assessment	0	0
Van Nuys Airport	16461 Sherman Way, Van Nuys, CA 91406	0.68	NEI 2011	0.06	7; 2012	0	0	0
TAMCO	12459-B Arrow Route, Rancho Cucamonga, CA 91739	0.42	NEI 2011	Unavailable	Unavailable	0	1	0
Exide Technologies	2700 S Indiana St, Vernon, CA 90058	0.1	NEI 2011	0.46	7; 2011	1	2	0
Trojan Battery	9440 Ann St., Santa Fe Springs, CA 90670	0.00556	NEI 2011	0.11	4; 2011	0	1	0
Quemetco Inc.	720 S 7th Ave, City Of Industry, CA 91746	0.0048	NEI 2011	0.11	7; 2010	0	1	0

¹Consider data from past three years.

²Data found at <http://www.epa.gov/ttn/chief/net/2011inventory.html> (5/1/2015)

Monitors Required for SIP or Maintenance Plan: 5

EPA Regional Administrator required monitors per 40 CFR 58, Appendix D 4.5(C) c: 0

Table 22c Minimum Monitoring Requirements for Pb, Non Source, Non NCore Monitoring

(Note: Refer to section 4.5 of Appendix D of 40 CFR Part 58.)

CBSA	Population and Census Year	Annual Design Value [ug/m3], DV & Years ¹	# Required Area Wide Monitors	# Active Area Wide Monitors	# Additional Monitors Needed
30180	13,131,431 2013	0.01, 2012-2014	0	4	0
40140	4,380,878 2013	0.01, 2012-2014	0	2	0

¹DV Years – The three years over which the design value was calculated.

Table 23 Minimum Monitoring Requirements for PAMS

(Note: Refer to section 4.5 of Appendix D of 40 CFR Part 58.)

Area	Type	# Required PAMS Sites	# Active PAMS Sites	# PAMS Sites Needed
SCAQMD Monitoring Area	1 or 3	1	3	0
	2	1	4	0
	4	0	0	0
	Upper Air Meteorology	1	5	0

Table 24 Collocated Manual PM2.5, PM10, and Non-NCORE Pb Networks

(Note: Refer to section 3.2.5, 3.3.5, 3.3.1, and 3.3.4.3 of Appendix A, 40 CFR Part 58.)

Pollutant	Method Code	# Primary Monitors	# Required Collocated Monitors	# Active Collocated Monitors
PM2.5 (RAAS)	780, 120	19	3	3
PM10 (SSI Hi-Vol)	063, 102	19	3	3
Pb (TSP Hi-Vol)	110 (Non Source)	8	1	2
Pb (Tsp Hi-Vol)	110 (Source)	5	1	1

Table 25 Collocated Automated (continuous) PM2.5 Network

(Note: Refer to section 3.2.5 & 3.3.5 of Appendix A, 40 CFR Part 58.)

Method Code	# Primary Monitors	# Required Collocated Monitors	# Active Collocated Monitors ¹
None	0	0	6

¹No FEM PM2.5 BAMs are listed as primary monitors; therefore no collocation requirement exists but all are collocated with FRM monitors.

Data Submittal and Archiving Requirements

As required in 40 CFR 58.16(a), data is reported via AQS including all ambient air quality data and associated quality assurance data for SO₂, CO, O₃, NO₂, Near Road NO₂, NO, NO_y, NO_x, Pb-TSP mass concentration, Pb-PM₁₀ mass concentration, PM₁₀ mass concentration, PM_{2.5} mass concentration, filter-based PM_{2.5} FRM/FEM field blank mass, sampler-generated average daily temperature, and sampler-generated average daily pressure, chemically speciated PM_{2.5} mass concentration data, PM_{10-2.5} mass concentration, meteorological data from NCore and PAMS sites, average daily temperature\average daily pressure for Pb sites and metadata records\information as specified by the AQS Data Coding Manual through December 31, 2014.

A data certification letter has been submitted to the EPA Regional Administrator certifying applicable data collected at all SLAMS and at all FRM, FEM, and ARM SPM stations that meet criteria in appendix A, to part 58, for January 1 through December 31, 2014.